

NA
9127
B6506

UC-NRLF



B 4 018 631



CITY & REGIONAL PLANNING

The Improvement of Boulder Colorado



The Improvement of Boulder, Colorado

REPORT TO THE CITY IMPROVEMENT
ASSOCIATION
BY FREDERICK LAW OLMSTED JR.
CHARLES ELIOT PROFESSOR OF
LANDSCAPE ARCHITECTURE
IN HARVARD UNIVERSITY

March 1910

11-1121
B6538
City
Records
7-1-11

The Boulder City Improvement Association

Founded February 1903

OFFICERS 1909-10

JUNIUS HENDERSON, President

E. G. FINE, Vice-President

FRED WHITE, Treasurer

WILLIAM J. BAIRD, Secretary

Chairmen of Standing Committees

Streets, Alleys, Sidewalks

A. R. COUZENS

Sanitation, Drainage, Sewerage, Water

O. M. GILBERT, M. D.

Tree Planting, Tree Culture, Street Parking

D. M. ANDREWS

Education, Floral Culture, Schools, Window Gardening

Play Grounds

MAUD GARDINER-ODELL

Parks, Lawns, Floral Culture

(*Vacancy*)

CITY AND REG.
PLANNING

CONTENTS

	Page
INTRODUCTORY: Purpose of this Report.....	1
BEAUTIFICATION AND COMMON SENSE.....	3
Beauty, like Economy, to be Aimed at in all Municipal Work...	4
THE NET PRACTICAL RESULT TO BE AIMED AT.....	4
What Boulder is Not.....	4
Boulder's Opportunity.....	5
A City of Homes.....	6
Industrial Enterprise.....	6
Suburban Farming.....	7
THE FEATURES TO BE CONSIDERED.....	8
Public Control of Private Improvements.....	9
Police Power.....	9
Influence of Taxation.....	10
STREETS	12
Reasons for Wide Streets.....	12
Streets in New Additions.....	13
Percentage of Area in Streets.....	13
Misfit Streets.....	14
Advantages of Rectangular Blocks.....	15
Where Rectangular Blocks Make Trouble.....	15
Rectangular Platting and the Real Estate Promoter.....	15
Who is Responsible for the City's Interest in Street Platting?..	16
The New York Gridiron.....	16
CITY PLANNING.....	16
Advance in the Art of City Planning.....	16
Enforcement of City Plan by Early Acquisition of Streets.....	17
Establishment of City Plan by Proclamation.....	17
The System of Official Bluff and Special Privilege.....	18
Unconstitutional Efforts to Establish City Plans.....	19
American Backwardness in City Planning.....	19
What Can Be Done.....	19
NEED OF A PERMANENT ADMINISTRATIVE OFFICER IN CHARGE OF CITY PLAN.....	20
Objection to Temporary Special Commission.....	20
Need of Appropriations.....	21
Official Backing.....	21
The Financial End.....	21

	Page
SPECIFIC SUGGESTIONS AS TO STREET IMPROVEMENTS.....	23
Broadway	23
To the Southwest.....	23
Flagstaff Mountain Road.....	24
Special Problems.....	24
To the Northwest.....	24
Fourth or Fifth Street.....	25
Policy as to Street Railway Locations.....	25
Twelfth Street.....	26
Twentieth Street.....	26
Twenty-Fourth Street.....	26
To the Northeast.....	26
To the East.....	27
Twenty-Eighth Street.....	27
From Seventeenth Street South and Southeast.....	27
A FUNDAMENTAL PRINCIPLE IN CITY PLANNING: DISTINC- TION BETWEEN MAIN THOROUGHFARES AND LOCAL STREETS	28
Effect of Such Planning on Real Estate Values.....	29
DETAILED IMPROVEMENT OF STREETS.....	29
Roadway Width.....	30
Form of Gutters; Storm Water Drainage.....	31
Kinds of Pavement.....	31
The Point of View in Choosing Pavements.....	31
Extravagant Pavements; the Real Measure of Cost.....	33
Asphalt	33
Modern Wood Blocks.....	33
Bitulithic	34
Brick	34
Block Pavements.....	34
Gravel	34
Crushed Stone.....	35
Objections to Macadam.....	35
Bituminous Binders.....	36
The Cause of Success and Failure With Bituminous Binders....	36
Oil Treatment.....	37
Summary as to Pavements.....	37
SIDEWALKS	37
Sidewalk Edges.....	38
STREET TREES.....	39
Silver Maples and Tree Butchery.....	39
Systematic Pruning.....	39
Close Planting.....	40
Kinds of Trees.....	40
Controlling Purpose of Tree Planting.....	41
Types of Tree Planting.....	42
Overarching Avenues.....	42
Open Avenue.....	42
Avenues Decorated by Small Trees.....	43

	Page
Uniform Trees in Straight Streets.....	44
Varied Trees on Picturesque Streets.....	45
Location of Trees.....	45
Irrigation of Street Trees.....	46
Bare Earth Surfaces.....	47
Paved Sidewalks over Tree Roots.....	47
Summary as to Shade Trees.....	48
STREET FIXTURES.....	50
Underground Wires.....	50
The Great Harm in Overhead Wires and Poles.....	51
Street Lighting.....	52
Are vs. Incandescent Lighting.....	52
Lamp Posts.....	52
ARTISTIC DESIGN OF MUNICIPAL CONSTRUCTION.....	53
The Employment of Special Expert Designers.....	54
WATERWAYS AND RELATED PARK OPPORTUNITIES.....	56
Floods	56
Encroachments on Flood Plain.....	56
How Boston Paid for Neglecting its Little Flood Problem.....	57
The Results of Neglecting Boulder Creek.....	57
How to Deal with the Flood Problem.....	57
Types of Treatment.....	58
Incidental Value of Broad Flood Channel Margins.....	59
A Boulder Creek Park.....	59
FUNDAMENTALS OF PARK DESIGN FOR BOULDER.....	59
The Outlook from Shade to Sun.....	60
The Sunny Sheltered Corner.....	60
A Special Type of Recreation Ground Proper for Boulder.....	61
The Design of the Boulder Creek Reservation.....	61
OUTLINE OF PROPOSED PUBLIC HOLDINGS ALONG BOULDER CREEK	62
River Drive.....	63
Play Field.....	63
Upland Drive and View.....	64
River Drive and Large Athletic Field.....	65
The Cost of Delay.....	65
SEWAGE DISPOSAL PLANT.....	65
Sewage Farms.....	66
Reasons for a City Sewage Farm.....	67
BOULDER CREEK ABOVE TWELFTH STREET.....	68
SUNSHINE CANON CREEK.....	70
THE REAL ESTATE VALUE OF PERMANENT VIEWS.....	71
A Special Opportunity.....	71
RED ROCKS.....	72
MOUNTAIN AVENUE.....	72

	Page
TREATMENT OF FARMERS' DITCH.....	73
Pleasant Improvements now Existing along the Farmers' Ditch	74
OPPORTUNITY PRESENTED BY THE IRRIGATING DITCHES....	74
An Aesthetic Predicament.....	75
How to Get Park Value from the Ditches.....	76
Beasley Ditch.....	79
County Road Boulevard.....	79
NEEDS OF EASTERN PART OF CITY.....	80
PARKS AND OTHER PUBLIC OPEN SPACES.....	81
The People and the City Plan.....	81
Back Yards vs. Parks.....	81
Deep Lots and no Parks.....	82
Shallow Lots plus Parks.....	82
Lots are Getting Shallower.....	83
But no Parks are Made from the Savings.....	83
Who Benefits from Illiberal Sub-Divisions.....	84
How the Present System Works.....	84
An Uncontrolled Monopoly.....	85
Land Speculation a Fair Game for the Players.....	85
But the Public Suffers in the End.....	86
The Public Must Protect itself and the Liberal Landowners by Controlling the Character of Sub-Divisions.....	86
SELECTION OF LOCAL PARK AREAS.....	87
Extent of Local Park Areas.....	88
Specific Park Sites.....	88
Lovers' Hill.....	89
Valley in Newland's Addition.....	92
Chautauqua Grounds.....	93
The City Forest.....	97
PUBLIC BUILDINGS.....	103
CONTROL OVER PRIVATE PROPERTY.....	105
The Billboard Nuisance.....	105
CONCLUSION	106

The purpose of this report is to offer helpful suggestions, drawn from experience and observation in many other cities and from a brief and limited though eager study of Boulder, bearing upon one of the broad fundamental questions at the base of all municipal activities, namely: What physical improvements within the reach of the city will help to make it increasingly convenient, agreeable and generally satisfactory as a place in which to live and work?

"Beautification" and Common Sense

Whether knowingly or not, everyone is affected by the appearance of his surroundings, and one of the important factors to be taken into account in all municipal improvements is the influence which their appearance has upon the mental and nervous condition of the people. As with the food we eat and the air we breathe, so the sights habitually before our eyes play an immense part in determining whether we feel cheerful, efficient and fit for life, or the contrary.

The attempt to secure in the appearance of our surroundings those qualities which make for good may be called "beautification," but the maximum effects in this direction are never to be secured by means of things done purely for the sake of decoration; they are to be secured only by constant, intelligent, sensitive regard for the quality of the appearance of things whenever any physical change and improvement is undertaken for any practical purpose whatsoever.

When the philosophers discuss the fine arts and the sense of beauty they tell us that at the root of it all is Order; sometimes subtle, complex, intricate and picturesque to a point that defies analysis, but always so far as analysis can carry us Beauty is Order, is dependent on the avoiding of the impression of disorder, although that is only the first step and it must be much more besides.

When it comes to the practical problem now before us of making the appearance of municipal surroundings such as to contribute to a healthy, cheerful, progressive state of mind we can subscribe heartily to the words of one of these philosophic analysts: "I object to the word 'decoration' as commonly used by designers, because it implies that additions are likely to be improvements. * * * * As designers * * * we make additions, indeed, to achieve the greater simplicity of Order, and for no other reason. Our object in all cases is to achieve Order, if possible a

supreme instance of Order which will be beautiful. We aim at Order and hope for Beauty." *

With this preparatory statement to indicate that regard for bettering the appearance of a city is not a matter to be delegated to a special department of municipal activity, but is a matter, like the economy and durability of public works, to be kept constantly in mind in every department, we will take up a consideration of the opportunities and needs for municipal improvements that most impressed us at Boulder.

The Net Practical Result to Be Aimed At

The first thing to be sought in taking up any practical problem, especially when it is big, vague and ramified, is a clear conception of the ends to be attained.

Here are some ten thousand people who, for their own benefit and that of their children, their successors and others whom any of them may see fit to admit to the community by selling or leasing additional places of abode, choose to obtain by joint action numerous advantages which are either impossible or at least difficult and extravagant of attainment by individual enterprise. The things they may wisely undertake so to provide and the manner of providing them will depend upon the needs, desires and means of the individual citizens present and future.

There are places which people endure merely because they find there opportunity for economic gain, and are thus enabled to save up money on which to enjoy life elsewhere at a later time or to attain certain of the comforts and advantages of increased income sufficient in their minds to offset the local disadvantages. In such places conditions making for comfort and happiness of living, however important for mitigating the drawbacks of the locality, must be regarded as entirely secondary to conditions that make

* Denman W. Ross: Theory of pure design.

for increased economic productiveness. If by standing a little more discomfort and dirt and ugliness and noise and worry without actually breaking down, a man can shorten the period of stay in such a place that may be necessary for making the money he thinks he needs in order to lead a comfortable and happy life elsewhere, why he is probably right to endure them.

Boulder is plainly not such a place, and the main lookout of the citizens is not how to make money as quickly as possible so as to go somewhere else to enjoy life, but how to get as much satisfaction out of life as they can in a very agreeable locality without the expenditure of more money than they are able to command while continuing to lead a satisfactory life.

Stretching away from Boulder to the Allegheny mountains extends an enormous region of fertile productive land, the seat of a vastly growing population of hard-working, money-making people.

BOULDER'S OPPORTUNITY

With all its advantages for production this great region has certain obvious drawbacks as a place for the enjoyment of life, drawbacks of climate, for example, and the drawback of relative monotony of scenery. Out of this region are coming in steadily increasing numbers of people of two classes in search of places where they may find rest and enjoyment of life. First, there are those who have decided, like many of the present citizens of Boulder, either because of the threat of ill-health or because their eyes are opened to a wiser philosophy of life, to shift their permanent home, with what savings they may have, to a place where conditions are more favorable for enjoying life as it passes. Second, there are those, of whom comparatively few have yet sought Boulder, who will continue to maintain their chief place of residence where their productive work is done, but with their families will seek rest and recreation for some weeks or months of every year amid different and more refreshing surroundings. These last are not the class called tourists, who hastily pass through a place which attracts them, leaving a few nickels behind or perhaps paying a liberal tribute for the services and materials they demand, but taking not the slightest interest in the welfare of

the community and often conducting themselves so as to interfere seriously with the comfort and welfare of those of the permanent residents not immediately dependent upon them for financial profit. We refer rather to those that stay long enough each season to become identified in a measure with the community, who intend to return again and become in many instances householders and taxpayers, ready to do their share toward making the place still more convenient, agreeable, and economical as a place of residence.

The manufacture of the best possible city of agreeable homes attainable with the means at its command and with the physical

A CITY OF HOMES

opportunities and limitations of the locality is, then, the principal business which the community has before it. Boulder will have a gradually increasing importance as a local distributing center for the necessities and comforts of life to a tributary area of farming and mining country of limited extent, and first rate facilities for carrying on this business need to be kept in view, parallel with the problem of a perfect city of homes as such. The presence of the State University means that Boulder will always have a large body of students, of teachers and of scholarly people not directly engaged in teaching, all occupied with intellectual pursuits and supported, like most of those who will seek Boulder for health or pleasure, wholly or largely by funds accumulated elsewhere or by others. The meeting of the needs of all these people, in the way of food, shelter, merchandise of all sorts, professional and personal service, transportation and entertainment, will occupy and support a great number of others; but all the facilities for business of this sort are of course an essential part of a good city of homes.

What other things need to be taken into account? What other occupations need to be reckoned with and provided for on

a serious scale? Nothing, we believe, which would be more than incidental to a city of homes; nothing which would be inconsistent therewith or detract from the excellence thereof. Such manufacturing

as may be carried on without the slightest drawback in the way of noise, dirt, disorder, or annoyance to those not connected with it would be very well, because it would support a certain number of people and enable them to have the advantage of living in Boulder instead of being compelled to live elsewhere; but any manufacturing or other business which is not free from such drawbacks would be a positive injury to the main business of the city with no corresponding advantage to the city at large, only a private advantage to a few persons. It would be a taking from all for the sake of a few, and developments in that direction, however speciously they may be presented and boomed by financially interested promoters, ought steadily to be resisted by public opinion.

In considering public improvements, therefore, no regard need be paid to the possible requirements of general manufacturing or other business inconsistent with the normal requirements of a city of homes.

Any manufacturing, however, such as brick making, or any other business no matter how unsightly or unattractive, such as swill collection and disposal, that may be required economically to meet the needs of a city of homes must be provided for, and so far as public action can affect them at all should be provided for in such a way that the business may be carried on as cheaply and as well as possible, keeping the objectionable features reduced always to a minimum.

Without discussing others, there is one kind of primary productive business not in the least inconsistent with a community of pleasant homes, a considerable development of which may perhaps be

SUBURBAN FARMING

looked forward to in the outskirts of Boulder. Irrigation farming is only at its beginning as yet in Colorado, and those who practice it have carried over into it traditions of farming under quite other conditions. The limit of the irrigable area is in sight and with the limitation of the area, under the favorable conditions of soil and climate about Boulder, more intensive cultivation is bound to develop, which means larger crops, more labor, and

smaller farms. It means rather market gardens than farms in the old sense, and a closer gathering together of the farmers' or gardeners' houses, making possible, if the opportunity is wisely utilized, many of the advantages of town or suburban life. Most cities of rapid and isolated growth—and Boulder for its size is an example of that class—show no typical suburban development. As in other such cities, there is at most points on the outskirts of Boulder a sharp distinction between the city lot, a closely standardized article as to size, and the undivided farm land of the country. There is, to be sure, a margin around the occupied city where houses are a good deal scattered, but they generally stand on small lots with vacant lots between them that are generally unproductive and uncared for. Only in certain regions, developed for the most part at a period when Boulder was growing very slowly and adjusted itself more perfectly to the conditions for the time being, is there much of that truly and typically suburban character that affords such admirable conditions for the kind of home life which it seems to be the main business of Boulder to provide for—homes with land enough, under irrigation, for really useful and productive gardens that are not only a pleasure but a source of substantial saving or even profit, with land enough for a measure of privacy and real home life outside the walls of the house in the gracious Colorado climate, and yet close-set enough to bring neighbors and school and church and stores and the other advantages of community life within convenient reach.

The Features To Be Considered

The most conspicuous features in the physical equipment of the city that come more or less completely and directly under public control are (1) the streets, devoted primarily to the passage of persons and vehicles including street cars, with incidental use as places of exercise and recreation; (2) the water ways, including the natural and artificial channels for the discharge of storm water and the main irrigating ditches; (3) public open spaces devoted mainly to purposes of recreation or education, but also to

various special functions; and (4) public and quasi-public buildings.

The equipments for the supply of water, gas and various forms of electric service and for the removal and disposal of sewage and other wastes are of course of the utmost importance, though less conspicuous; they form a special province of municipal equipment and management with which this report will not deal except insofar as they bear upon the four subjects first enumerated.

One other subject, which is of course the finally determining factor in regard to the general excellence of a city, is the character of development and maintenance that takes place on the private lands to which all the public improvements are ancillary. The spirit and principles of democracy, of personal freedom and individual responsibility, with which we dare not tamper if we hope to make well-grounded and permanent advance, preclude any public authority from minutely directing this development; yet the public cannot avoid influencing it in two specific ways, apart from the influence of public sentiment as such.

1. It does so directly and in a negative or prohibitory way through the police power, by exercise of which it is bound to prevent such use of private lands as would unreasonably injure or jeopardize the safety, the health or the comfort of others. The final arbiter for determining what constitutes a reasonable standard of public safety, health and comfort, with which individual property owners are not allowed by the courts to interfere for the sake of their private pleasure or private gain, is nothing but sustained public opinion. With every century, with every decade, in progressive countries the standard is raised.

Indeed one means of measuring the civilization of any community is to be found in the effectiveness with which the building ordinances, the regulations of the Boards of Health and the

other applications of the police power prevent the individual from seriously endangering or discomforting others without needlessly hampering his freedom of enterprise in harmless or beneficial directions.

2. The public also influences the development of private property in a positive though indirect manner through its

INFLUENCE OF TAXATION

method of distributing the burden of the public expenditures. License fees, franchise taxes, fees for special services, special assessments for the installation of special public works or for their maintenance and operation, and other special sources of public revenue, all tend according to their amount and the factors which are made to determine how much of them must be paid by any given property owner, to make certain courses of action in the development or neglect of his property more profitable or less profitable, as the case may be. The total amount remaining to be raised by direct taxation of real and personal estate and the wide range of choice exercised in practice by assessors either deliberately or unconsciously in shifting its burden more or less heavily upon personal property, upon land in various conditions of use and neglect, and upon buildings and other improvements, still further influence in a very marked way the action which the property owner is likely to take. Some municipalities have used the control over the power of taxation deliberately and specifically to induce a desired class of improvements on private property by offering exemption for a term of years from certain controllable taxes upon improvements of the class desired. Not infrequently a tax is applied with a distinct view to the discouragement of certain classes of private undertakings as compared with others, as in the familiar high license fees for the sale of intoxicating liquors and the less familiar but growing practice of taxing bill-boards. The subject is a very complex one and surrounded with legal and political pitfalls, but it cannot be ignored. Anyone whose voice has an influence in controlling or modifying at any point the incidence of the burden of taxation and who has a regard for the physical characteristics of his town is bound to consider with the utmost

care what sort of thing a possible change in the taxes will tend to make the taxpayer do with his property.

Leaving these more complicated issues, we shall take up in detail the four elements in the physical equipment of the city first above mentioned, beginning with streets.

Streets

In a town laid out as the fully developed central portion of Boulder is laid out, with 80-foot streets, 20-foot alleys and blocks 300 feet square, about 40 per cent of the total area is under public control in the streets. The ordinary amount of travel passing along the streets could, as a problem in transportation engineering, be carried without change in the character of the vehicles or the proportion of foot-passengers, and without changing the size of the lots, upon gangways so much narrower than the streets as laid out that this proportion could be reduced to 10 per cent. In the busiest part of the City of Havana, where there is more travel of all kinds than Boulder is likely to see during the next century, the proportion is below 10 per cent. What is the balance good for?

1. The extra width is valuable as the only feasible insurance against delays, inconveniences and expenses in case the travel should at any time in the future largely outgrow its present volume. 2. It is valuable in order to provide conveniences accessory to mere transportation, such as the right to stop and to load and unload vehicles in the street instead of being compelled to do all such business on private property by means of interior court yards such as are customary in Spanish countries. 3. In order to avoid the necessity for the strict regulation of traffic movement that would be required if the travel were to be carried expeditiously upon ways of the minimum width. 4. In order to afford freer access of light and air to all the abutting property than would otherwise be possible. 5. Finally, in order to permit the streets to serve in some measure purposes of public enjoyment by means of their agreeable spaciousness of appearance and by means of trees and other decorations which the greater width makes possible.

These are sound, strong reasons and the people who made the original layout of Boulder appear to have made an intelligent

and reasonable choice in determining the proportion of street area to lot area, avoiding an extravagantly and inconveniently large proportion on the one hand and a mean and short-sightedly small proportion on the other. Their plan is open to some criticism in other respects, as will be noted later,—what human plan is free from faults?—but in this regard it was an excellent start.

Under the system of “additions” platted by real estate owners upon their own initiative and without control, the newer parts of the city have been laid out, naturally enough, with a less liberal regard for the interests of the general public. These “additions” are not laid out as charitable enterprises and there is no reason to expect those who lay them out to be influenced by other motives than those which appear to govern them. It is their business to get as many lots out of each subdivision as they can and to devote as small a percentage as they can to street area without spoiling the sale of the lots by making things too conspicuously mean. The demands of purchasers keep the standard from sinking indefinitely, but they are not free to express their preference effectively in this matter. It is often for them only a choice between evils, and other factors generally seem much more important to the individual buyer than liberal street width; he wants to be near his friends, or in a fashionable quarter, or on high ground, or near a car line, or he wants easy terms, or something which makes him ready to put up with narrow streets. Seller and purchaser have their own proper personal and temporary ends to serve and it is not the business of either of them to look out for the general interests. And as a result, roughly speaking, the more Boulder grows, the narrower its streets get.

— In the original town of Boulder the area occupied by streets and alleys was equal to 42 per cent of the area of building lots, and including Court House Square with the streets the total area under public control is equal to 44 per cent of the area in building lots.

**PER CENTAGE OF AREA
IN STREETS**

In the Chautauqua Heights Addition the area in streets is equal to 32 per cent of the area in lots. In the Newland Addition

the area in streets is equal to 36 per cent of the area in lots; East Boulder, 42 per cent; Mapleton, 35 per cent; Floral Park, 35 per cent; Maxwell's Addition, 31 per cent; Interurban Park, 30 per cent.

In none of these additions are there any areas except the streets left under public control.

The tendency is natural and inevitable unless it is made somebody's business to look after the public interest in this matter, and although the tendency has not gone far enough as yet to lead to any very striking results, it is time that some positive measures were taken to check it and at least hold to the standards with which the city started.

We speak of this matter first because it is a simple and positive question of quantity, easy to state and plain to see, but there are questions of quality really of much greater importance. East of Fifteenth Street, for over half a mile, as far, that is to say as any subdivisions have been platted, not a single street goes through from Pearl Street to Arapahoe Avenue without one or more kinks or angles in it and a sharp contraction in width. At the limit of the plattings 24th Streets runs through straight because it was an old country highway, but it is narrow and even it stops at Pearl Street without any connection to the north. Again, Walnut Street offsets nearly half its width when it jerks across the line into the East Boulder subdivision; Pine Street does the same thing and shrinks in width very perceptibly when it passes into Tourtellot and Squires Addition; Broadway, which as the southern continuation of 12th Street forms part of one of the most important thoroughfares in the city, shrinks from 100 feet in width to 80 feet on passing into the University Place Addition, and a little further on makes an angle and shrinks again to 60 feet wide.

Another difficulty arising out of the system of leaving the layout of permanent public thoroughfares to private parties who

ADVANTAGES OF RECTANGULAR BLOCK have only temporary and special interest in the result is beginning to be seen where the growth of Boulder is encroaching on the steep and irregular slopes of the mesas. A flat piece of paper of a given size can be subdivided into a larger number of standard sized fragments with less trouble by a rectangular system of cutting up than in any other way, and other things being equal a rectangular house lot is apt to be more convenient and usable, foot for foot, than one of any other shape. These are the principle reasons for rectangular subdivisions, and very good reasons they are. Even

WHERE RECTANGULAR BLOCKS MAKE TROUBLE when the flat paper is the conventional representation of a piece of ground that is far from flat, the advantages remain equally strong for the dealer in lots, who alone is responsible for the method of subdividing as things now stand; but in such a case certain difficulties are introduced for which others have to foot the bill in years to come. Steep grades needlessly burden the community with the triple tax of inconvenient and costly transportation, of endless successive expenditures for making improvements in the grade when the inconvenience becomes intolerable, improvements that involve not only the cost of grading and of tearing up a street in actual use, but also more or less serious grade damages to improved property along the line, and finally the tax of a seriously increased cost of maintenance. On the other hand, the theoretical advantages of precisely rectangular lots, although they may attract the inexperienced purchaser, are apt to be counterbalanced by sharp differences in grade between one corner and another that have to be overcome by costly construction, so that the only man who gets much advantage out of the rigidly rectangular system thus applied is the real estate promoter, to whose uncontrolled discretion the choice of a plan is left.

Why should he not stick to the rectangular system regardless of future results? As before mentioned, he is not subdividing **RECTANGULAR PLATTING AND THE REAL ESTATE PROMOTER** the land as a charitable enterprise or merely for the civic improvement of Boulder. In some cases the owner is doubtless a non-resident or

BOULDER CITY IMPROVEMENT ASSOCIATION

a temporary resident whose purpose is to sell out at as good a price as he can with the least possible extra investment for surveys, plans and improvements, and then get out. Why should he be expected to give elaborate consideration in laying out the streets, as a well-managed railroad company does in laying out its right-of-way, to questions of grade, of cost of operation and maintenance, and of promoting the permanent prosperity of the section?

And yet under the present system, if the real estate promoter does not happen by some stretch of altruism or by mere **WHO IS RESPONSIBLE FOR THE CITY'S INTEREST IN STREET PLATTING?** luck to provide for these permanent public interests it is certain that nobody else will, because under the present system in Boulder nobody else has anything to say about it.

It is just a hundred and one years since a committeeman of New York City, standing beside a building in course of construction and looking out over the farm lands, swamps and woods that stretched in New York City from Bleecker Street to the Harlem River, picked up a mason's sieve that was lying near at hand and laid it down upon the map of Manhattan Island, saying "there, gentlemen, what better plan could you have than that?" and because nobody proposed anything better, the mason's sieve plan was adopted, with a single diagonal line angling up across it consisting of the old country highway that men call today Broadway: it was an ill-considered, bad plan; and thereafter no one was allowed to open any street except upon the lines of the sieve.

Not a little experimenting has been done in the years since then, both on the question of how to lay out streets for the best **ADVANCE IN THE ART OF CITY PLANNING** permanent interests of a city and on the question of how legally to enforce the public will without unfairness to landowners and without an undue burden of expense upon the community. Today it is possible to speak more definitely upon the former question than on the latter, for at least the principles governing the physical de-

sign of cities are well fixed, like those governing the design of any piece of efficient machinery or any work of fine art, but the legal question has been complicated by arbitrary differences in state constitutions, by local and temporary peculiarities of statute law, and by the gradually altering precedents of the courts.

Broadly speaking, two principal legal methods have been used to secure conformity in street layout to plans adopted in advance by city authorities. The first is for the public authorities to lay out and acquire the rights in at least the main thoroughfares and often in the whole street system of a given section, some years in advance of the physical need for the streets, leaving the construction to be done from time to time as required. This method involves the assessment and payment of damages at the time of the original taking.

This system accomplishes the purpose; but it is sometimes rather hard on the public treasury, especially if political favoritism comes into play. Certain individuals are bound to be paid cash down for the right to run streets through their farm lands many years in advance of the need for constructing the streets, and until the construction takes place they can go on using the land for farm or other purposes almost as though no action had been taken. We have seen streets laid out in this way in Brooklyn, New York, which not only were cultivated during many years by the abutters as market gardens but which served an additional corrupt purpose through a contract for street lighting. Being public streets, even though not open to travel, gas mains were laid in them, and at the standard price per light the municipal lighting contractor sent his men night and morning through the rows of cabbages to light and extinguish the gas lamps.

The other principal method of procedure after planning a proposed system of streets is to publish it and announce that no streets will thereafter be accepted by the city which do not conform to the plan. In theory this is sound, but in practice the results are wide-

**ENFORCEMENT OF CITY
PLAN BY EARLY AC-
QUIREMENT OF
STREETS**

**ESTABLISHMENT OF CITY
PLAN BY PROCLAMATION**

ly various. Usually the city officials have not the necessary backbone to stand up for their plan, and a persistent and cheeky promoter, even without corruption, can not infrequently induce the city to accept a platting which differs more or less radically from the established plan. Sometimes the promoter simply goes ahead regardless of the city plan, rough-grades his own inadequate streets as private ways and sells off the lots to more or less unsuspecting citizens and leaves THEM to fight it out with the city. They will have built houses, possibly in ignorant good faith, on the promoter's so-called streets, and when they come with a demand for curbing, sewerage, lighting, etc., it is too much of a strain on the easy-going, good nature of American city officials to tell them that it was their own fault for building on streets improperly laid out and that they must therefore improve the streets themselves as private ways and maintain them as such forever at their own risk and expense. If city officials had the backbone to enforce such harsh and impersonal justice, and stick to their announced plan in spite of baby-talk, a few such unpleasant episodes would soon establish respect for the adopted plan and

THE SYSTEM OF OFFICIAL it would be followed without more
BLUFF AND SPECIAL ado. But it appears to be a fact with
PRIVILEGE
which it is necessary to reckon that in the mind of the average American official any general rule of policy and almost any ordinance or statute law is more or less of a bluff. If anybody of good standing in the community calls the bluff, he is apt to think more of keeping peace in the family and avoiding harsh feelings than of hewing to the line in the execution of his presumptive duty. If he disregards statute law in this loose, good-natured way, some reforming busy-body may get after him in the courts; but where it is merely a matter of general policy concerning which his office must possess discretionary power in order to make the system workable, his temperament plays havoc with the general rule, resulting in special favors for the more aggressive and self-seeking disregards of the public interest.

A great many laws have been put upon the statute books of

various states authorizing cities through special machinery created for the purpose to establish street plans to which the land-owners must conform under various penalties; as for example the Board of Survey Law in Massachusetts, which provided that if any building or other improvement was constructed within the limits of any of the proposed streets after they had been defined by the Board of Survey the owner should not be able to collect damages on account of such building or improvement at the time when the street is actually taken over by the city. But the courts have repeatedly held such laws to be unconstitutional unless provision is made by which the land-owner may receive payment for the encumbrance thus placed upon his freedom to do what he wills with his land. Such laws, therefore, when they accomplish anything, merely serve for a time to strengthen the bluff which the city puts up when it says the established street plan must be followed under severe penalties: which deter the average citizen but which the professional knows cannot be or will not be enforced if he boldly persists in disregarding the plan.

**AMERICAN BACKWARDNESS
IN CITY PLANNING**

It is easy to see that the difficulty is intimately linked with one of the weakest features of our whole American political and administrative system, and it is therefore no wonder that the situation is rather discouraging and that the street layout of American cities has been floundering for a century without appreciable improvement while a whole science of street planning has been developing and is showing its results in European cities that have been growing at the same rate as our own. It is a discouraging situation but success in it is immensely important to the future welfare of every city, and the practical question faces us "TAKING THE FACTS AS WE FIND THEM WHAT CAN REALLY BE DONE ABOUT IT?"

WHAT CAN BE DONE

In the first place the city, as represented in the political officials responsible for its policies, the Mayor and Council, must

be convinced that it is desirable and practicable to look ahead in the matter of street extensions and to safeguard the interests of the city therein, and that such insurance is worth paying something for. The policy having been accepted as a sound one, the necessary authority and funds must be voted to enable a permanent administrative officer of the necessary technical ability to develop a street system plan, with or without special expert assistance as may appear advisable.

**NEED OF A PERMANENT
ADMINISTRATIVE OFFICER
IN CHARGE OF CITY PLAN**

We say "permanent administrative official" with reason. Even American cities are coming to recognize that tolerable efficiency in the board of directors, composed of changing political officers responsible for the city's policy, is supplemented by an administrative and executive staff of experts more or less permanent in their tenure. It has come to be generally recognized, for example, that an officer who performs duties of such a highly technical nature and depending to such a high degree upon continuous personal knowledge of technical details as those of a city engineer, or his principal assistants, can only be properly performed if they are in the hands of an expert, non-political, administrative officer, holding office practically during good behavior; as distinguished from the political or representative officers, whose duty it is to control the general policy and the rate of expenditure of the administration in accordance with the popular will and who must therefore change with more or less frequency in order fairly to reflect that will.

It is not, in our opinion, desirable that the making of a general plan for street extensions or improvements should be entrusted to a special, temporary commission or officer, because in the nature of things it is not possible that such a plan should be brought to a definite finish, like plans for a building. It is a matter of continuous growth and of a certain amount of continuous revision and the duty of creating the plan and keeping it not merely "up to date" but at least a few years ahead of up to date

should therefore be intrusted to a "permanent administrative officer." In a city of the size of Boulder such a duty naturally falls to the city engineer, in a larger city to a special department, but in either case the assignment of the duty must be accompanied by vote of funds for the necessary assistance in doing the work.

**NEED OF
APPROPRIATIONS**

It is a matter that requires initiative and time for careful investigation, and simply to assign the duty to a busy city engineer's department whose resources are habitually taxed to keep up with the pressure of routine duties amounts to nothing without a special fund available for pushing this particular matter.

Having got so far, the Council ought to pass an ordinance to the effect that no street will thereafter be accepted by the city

OFFICIAL BACKING

except upon certificate of its approval by the officer in charge of the street plan. Of course this cannot prevent a subsequent Council from eating its words and accepting any kind of a street regardless of the plan; but it at least strengthens the bluff, and will enable future weak-kneed but well-intentioned Councilmen to escape pressure from personal or political friends who may want the plan disregarded, by hiding behind the permanent official. The latter is better able to stand the pressure than a political official, if he has even a half-hearted and tacit backing in the Council, and he is helped by the pride of authorship to play the part of the hard-hearted partner with a better grace.

Finally the city has got to come to the point of actually acquiring locations for a few wide, main thoroughfares forming

THE FINANCIAL END

essential features of the gradually expanding plan far enough in advance to make sure that they will not be blocked or seriously narrowed or deflected by private improvements or rising land values; and for these few, good, main thoroughfares the cost, which is after all only the margin by which the damages exceed the betterments, must simply be paid with as good a grace as possible, like an insurance premium or the price of grain sowed in the fall for next year's harvest. Even at that the money may be raised on a long

term bond issue with more reason than the average expenditure for municipal improvements, most of which give their highest values when they are new and are wearing out when the bonds fall due, whereas proper street locations of course increase in usefulness with every year's growth of the city.

The above appears to be a practical programme which is within the discretion of the city without having to go to the legislature for any special authority. We presume there is nothing to prevent the city from making surveys and plans relating to land outside its boundaries which may at some future time come in, since it is permitted to own and operate water works and a park outside of the city boundaries. It might be convenient, however, to secure some additional authority from the legislature: that is a matter for the lawyers.

If any legislation is to be secured it would be well for the lawyers to consider the following device for diminishing the damages due to taking street locations for future development. We are not aware that the device has ever been employed, but it does not appear to be open to the fundamental constitutional objections that lie against most of the special laws upon this subject. When a street location is not utilized for street purposes for a number of years after its acquisition by the city the usufruct of the land remains in the hands of the owner, but his tenure of the usufruct being uncertain and terminable by the city at will this fact cannot reduce the amount of damages at the time of taking very materially. Also this element of uncertainty of tenure, being dependent upon the discretion of city officials, tends to introduce opportunities for favoritism or at best for charges of favoritism. Our suggestion is that the practice should be to take by condemnation the right of entering upon the street location at a definite future time, say ten years or twenty-five years in advance, leaving in the hands of the owner a perfectly definite tenure of the land, the capitalized value of which can be taken into account in assessing the damages of the taking. If it should become necessary to enter upon the street for construction before the end of the fixed period it will normally be because the owner

is anxious to have the improvement made and is ready to waive his right to the continued use of the land for other purposes in order to have the street opened promptly, but if he is not willing so to waive his rights they can be extinguished at any time by condemnation upon payment of the fair value of the unexpired term.

So much for the legal and administrative aspect of street planning. As for the actual laying out of a plan we can do no

**SPECIFIC SUGGESTIONS
AS TO STREET IM-
PROVEMENTS**

more than cite a few instances of the sort of thing that needs to be done and discuss a few general principles.

To do more on the basis of our brief study of the situation would be as if a tailor were to look once or twice at a man passing in the street and then go home and cut a suit of clothes to fit him.

We have spoken of the successive narrowings of Broadway. It is plain that there ought to be an ample and convenient main thoroughfare taking up with the

BROADWAY

100-foot portion of Broadway and

extending indefinitely into the territory that lies between the Colorado Southern Railway and the base of the high mesas, probably between the railway and the corner of the new cemetery. To get a good line, to say nothing of a proper width, would involve some disturbance of the streets and lots of the subdivision called "Interurban Park" and the sooner a decision is reached the better it will be for all parties.

It will become highly important at some time in the future, as Boulder attracts people who are able and willing to pay for

TO THE SOUTHWEST

more or less detached residences permanently commanding fine views, such

as are to be found by the thousand in first-class suburbs and summer resorts in the east, to develop the magnificent possibilities of the great mesas to the south of Chautauqua Park; and to this end a first-class thoroughfare on good grades ought to be planned leading up and into that section. It is a difficult problem from every point of view and it is highly important that it should

be worked out before the land to the east and northeast of Chautauqua becomes so fully occupied as to leave no flexibility in choosing the point of departure and improving the layout and grades of the approach. If the best line of approach proves to be Twelfth street, as seems not unlikely, it would seem important to consider whether some improvement ought not to be made in the present means of connection between the corner of Broadway and University Avenue and the beheaded southern portion of Twelfth Street.

Some more direct and better graded line of approach should certainly be provided to connect the central, the western and the northern parts of the city with the **FLAGSTAFF MOUNTAIN ROAD** Flagstaff Mountain road where it crosses Gregory Canon Creek.

Lines of travel along Boulder Creek will be discussed in connection with storm water channels and park opportunities below; as will also the problem of handling the flood waters of Sunshine Canon and securing a proper connection for a thoroughfare in that canon with the center of the city. A perplexing problem involving an opportunity for securing excellent results and a more than equal chance of making an extravagant and wasteful botch is to be found in the development of the lower end of Sunshine Canon and the slopes below Red Rock. The best results for all parties can only be secured here by a frank, intelligent, and far-sighted co-operation of the city in the layout of streets and parks with the land-owners in the layout of building lots.

Perhaps a thoroughfare having somewhat the character of a parkway or pleasure drive, but serving also to give access to scattered house sites of great picturesque value but relatively high cost of development, will be justified after the lapse of some years, branching off from the Sunshine Canon Road and Mapleton Avenue at a point west of the Sanitarium, rising through the valley west of the Hogback and passing out on to the east face of the Hog-

back a little above the level of the Silver Lake Ditch, at a point a few hundred feet north of the place where the ditch crosses on to the east face. Thence it would work northward on a nearly level line commanding wonderful views to the eastward. The park aspect of this possible thoroughfare will be discussed more fully below.

A good main north and south thoroughfare wide enough for car tracks is needed about where Fourth Street or Fifth Street is

**FOURTH OR FIFTH
STREET**

laid north of Maxwell Avenue. Fifth Street would give considerably better grades than Fourth Street and is probably preferable, but whichever street is adopted the city ought to insist upon its being widened and graded to a much improved profile as a preliminary to its adoption as a main thoroughfare and the laying of tracks in it. Both Fourth Street and Fifth Street "break joints" to some extent in passing from the "Mountain Heights" subdivision to the "Newland Addition" and there should be a sufficient enlargement or square at the junction to overcome its awkwardness unless the general widening of the street can be made to accomplish the same purpose. In the Newland Addition any widening of a north and south street would curtail the depth of lots, but the widening should be done without cost to the city at large because 100-foot lots on a wide street with car tracks are worth more than deeper lots on a narrow street without car tracks. And the city will be entirely within its rights and entirely

**POLICY AS TO STREET
RAILWAY LOCATIONS**

justified in taking the position that it will never authorize the location of car tracks except in wide thoroughfares properly adapted for such use. To widen Fourth Street or Fifth Street through "Maxwell's" and "Mountain Heights" subdivision will involve wiping out a certain number of lots, but again the cost of doing so will be fully justified and may reasonably be assessed in whole or in part upon the adjacent property benefited by the widening and by the car line contingent thereon.

Twelfth Street beyond the angle near Portland Place ought

to be laid out wide enough to serve in the future all the purposes of a great main thoroughfare for traffic and car lines with ample sidewalks, shade trees, etc., for an indefinite distance to the north.

TWELFTH STREET

East of Twelfth Street for a distance of a mile a high steep-sided ridge, called Lovers' Hill, blocks all north and south travel except at a single pass opposite Twentieth Street, and the only important

TWENTIETH STREET

future thoroughfares in this section are therefore the two country roads which extend north through this gap and past the east end of the ridge. These should both be laid out of ample width. In this connection it is to be noted that Twentieth Street, which will be of considerable importance through its connection to the north, now comes to a dead end at Walnut Street and it is seriously to be considered whether it ought not to be extended south to Goss Street between which street and Arapahoe Avenue it has already been opened, although at a reduced width. Also, as before men-

TWENTY-FOURTH STREET

tioned, Twenty-fourth Street, which has a fairly important connection to the south and which is on the same line as the road which leads to the north past the east end of Lovers' Hill, is at present laid out as a narrow street and comes to a dead end at Pearl Street. It certainly ought to be extended north to complete the connection at a respectable width. Its extension would include about a quarter of a mile of the Beasley Canal and could be made to have a rather striking and valuable character as a parkway or boulevard in a manner discussed below under the proper head.

From this proposed widening and extension of Twenty-fourth Street at its intersection with Hill Street a wide, main thoroughfare ought to be laid out on

TO THE NORTHEAST

a diagonal line to the north east, preferably following the line of the Beasley Canal in whole or in part for a considerable distance.

Either Pine Street or Spruce Street ought to be extended

as a wide, main thoroughfare parallel to the D. & B. V. R. R., and
 a new east and west thoroughfare
TO THE EAST tapping the traffic of both Pearl and
 Walnut Streets should be laid out to the eastward of 24th Street
 on a line not immediately next the railroad. This proposed new
 thoroughfare would probably fork about half a mile east of 24th
 Street, one branch entering the district between the D. & B. V.
 R. R. and the arm of the C. & S. Railway while the other branch
 would keep entirely to the south of the latter.

Twenty-eighth Street is a cross-town thoroughfare of some
 future importance and should probably be widened and extended,
 and certainly an ample cross-town
TWENTY-EIGHTH STREET line should be laid out just west of the
 Wye, which offers a permanent obstacle to street travel of con-
 siderable extent.

South of Boulder Creek again and between it and the Mar-
 shall Branch of the C. & S. some improved lines of communica-
 tion will be much needed. From the
FROM SEVENTEENTH STREET SOUTH AND SOUTHEAST Seventeenth Street bridge in addition
 to a connection under the railroad to University Avenue and
 through the University grounds to the south, a road ought to be
 laid out on a good grade rising up the face of the bluff north of
 the Hospital (in place of the present precipitous road that runs
 between the Hospital and the Railroad). The proposed road would
 rise gradually to the edge of the level ground south of the Hos-
 pital and extend along near the edge of the declivity so as to tap
 the various roads leading southward while commanding a fine
 view of the city with Boulder Creek in the foreground. The park
 value of such a road would be very large and it will be discussed
 in more detail under that head, but it is certainly desirable as a
 mere means of communication. Ultimately, descending again to
 the lower level at or near Twenty-eighth Street, it would presum-
 ably extend off to the southeast through Section 32.

It is not to be supposed either that the above is an exhaus-

tive statement of the thoroughfares that it would be well to provide for or that all of the lines mentioned are equally important to lay out in advance of the actual growth of the city; but it may serve as the

**FUNDAMENTAL PRINCIPLE
IN CITY STREET PLANNING:
DISTINCTION BETWEEN
MAIN THOROUGHFARES AND
LOCAL STREETS.**

basis for a programme of work and it may help to make clear a fundamental principle too little recognized in most of the city planning that has been done in this country. That principle is to make sure of a limited number of main thoroughfares, first; to get these laid out of the most ample width, so as to be sure that the contingencies of the future will not overcrowd them, and on reasonably direct and continuous lines and with no bad gradients; to do this regardless of local and individual objections and opposition and even at considerable expense in order that the general transportation interests of all other localities and individuals may be properly provided for: and then in laying out the secondary or intermediate streets to consult local wishes and individual preferences and minor economies of land and construction to a marked degree. Systematic adherence to this principle not only results in a street system that serves the practical requirements of transportation adequately, but it is as a whole, more economical of land and construction than one in which the distinction between main and secondary streets is not so clearly made, and finally it tends to make a far more interesting and agreeable city than one in which all the streets approximate an even uniformity of width and character regardless of the purposes for which they are used. For residential purposes there is a coziness and quiet attractiveness about a street of moderate length and moderate width through which no heavy traffic has inducement to flow, that is in marked and pleasant contrast with the interminable vistas of streets that go on indefinitely in an unbroken straight line, especially if their grades be such as to attract considerable amount of general teaming; while on the other hand for the sort of occupation that naturally seeks the main lines of travel, such as stores, etc., the advantage of thus concentrating

the through travel on certain streets is very considerable. What-
EFFECT OF SUCH PLAN- ever tends to stability in the distinct
NING ON REAL ESTATE segregation of different classes of oc-
VALUES cupancy of conflicting or incongruous character tends to stability
of real estate values and to a higher average range of values. The
more certain a man can feel that the character of a given street
is pretty well fixed the more he is willing to pay for the privilege
of having a lot on the kind of street that he wants. The sharp
differentiation in width and character of treatment between the
main thoroughfare and the ordinary streets is a step in this di-
rection as well as a practical economy in dealing with the transpor-
tation problem. To discuss at this point the next step, which con-
cerns district building laws and other localized restrictions in-
tended to safeguard the class of occupation in given districts
would take us too far afield.

The detailed improvement of existing and future streets in
point of practical utility, economy of maintenance and appearance
DETAILED IMPROVEMENT is the next matter to be considered;
OF STREETS the main elements being roadway
pavement, surface-water drainage, sidewalks, street trees, street
fixtures and incidental features, but the most important thing of
all is the general effect of all these features considered as a whole.
It is just as well to point out at the beginning that there is no
single best type of treatment even for streets of a given width and
of the same general character of occupancy. Nothing is more des-
perately uninteresting and unattractive than the monotonous
repetition of the same type of street. It is conceivable that a
committee of ladies might come to a consensus of opinion as to
which was the best looking dress in town but what a depressing
thing it would be if they all took to wearing it! Yet we may ven-
ture some general recommendations as to Boulder streets without
much risk that they will be so literally followed as to lead to
monotony of appearance.

A good roadway well maintained is a rather costly article
and the wider the roadway in any street the longer it will take

ROADWAY WIDTH

to bring it up to a good standard and the harder it will be to keep it there.

Moreover every unnecessary square yard of roadway is an unnecessary source of dust and glare. If a street be laid out wide enough between property lines to provide for future contingencies it is a simple matter to widen its roadway whenever it proves desirable to do so, and the saving in cost of maintenance and in interest charges due to building a roadway narrow at first and widening it some years later is usually more than enough to pay for the extra cost of doing the work in two or more operations. Except on the streets carrying a large volume of traffic we believe that most of the Boulder streets have a wider traveled way than is economically desirable and that they would be distinctly improved in appearance if the traveled way were narrowed. Except on main thoroughfares a roadway about 24 feet wide will serve all practical purposes and generally look better than a greater width. This is sufficient for ordinary vehicles to turn in without serious inconvenience and permit vehicles to come to a stop on both sides of the road without blocking passage. On minor and suburban streets a width as narrow as 16 feet has been recommended by a distinguished authority for the city of Chicago and there are cases in Boulder where we should endorse this recommendation, but in such cases it should ordinarily be possible for vehicles to turn off over the edge of the road on emergency: in other words the curb, if any is used, should be set back some distance from the edge of the road, the intervening space being occupied by grass, or by unpaved earth, or possibly by some inferior form of pavement of low annual cost when subjected only to light and occasional use. A central pavement about 16 feet wide of first-class smooth pavement flanked by borders eight feet wide paved with cobblestones and graded so as to act as gutters, while at the same time providing standing space for vehicles at the side of the road and turning space when required, makes a form of street pavement relatively inexpensive to construct and maintain and having some distinct advantages where grades are steep and where a macadam pavement is subject to washing and any smooth pavement is liable to be slippery on occasion. But

ordinarily a good smooth pavement about 24 feet wide clear of the gutters is a reasonable design for ordinary residential streets.

FORM OF GUTTERS: Except in those streets where an irrigating channel serves at the same time as a gutter for carrying off the surface water, the gutters, as a matter of convenience and appearance, ought not to be like ditches sharply separating the sidewalks from the roadway. But to avoid deep big ditches requires that the storm water should be removed from the gutters at frequent intervals into a system of storm-water sewers connecting ultimately with the open natural channels of storm-water discharge. In the long run this is a large and costly undertaking and one that needs to be planned in a comprehensive and systematic way if a good deal of money is not to be wasted on it; but it is an item that every well-organized city has to face sooner or later.

As to the kind of pavement, there is no single kind of pavement to which a city can turn as the best solution of the problem,

KINDS OF PAVEMENT neither asphalt, nor brick, nor cressed blocks, nor bitulithic nor macadam nor stone. In any given city each street, or each class of streets, according to their grades, the volume and character of the traffic, and the character of the abutting property presents a separate problem: and the first step in reaching a satisfactory result is for the city engineer or other proper administrative department to classify the streets carefully and scientifically according to the above factors, and then to deal with each class by itself.

Most progressive American cities have dealt with the street improvement problem much after the fashion in which a well

THE POINT OF VIEW IN CHOOSING PAVEMENTS regulated household of moderate but increasing resources deals with the question of household furniture. An intelligent family having an equipment with which it can get along after a fashion, invests from time to time in pieces of good, durable, beautiful furniture of immediate use and permanent value, being spurred to each purchase by growing requirements and a high standard of living

and by the sense of financial ability, knowing that if it can afford the immediate expense the gain in comfort and pleasure will be real and permanent with a very slight added burden of care. It is a form of saving, really, almost like putting money in the bank if the purchases are intelligently made, for really first-class furniture in the hands of a good housekeeper does not seriously deteriorate. And cities, looking upon good pavement as a kind of municipal furniture, have been apt, when they have faced the problem at all seriously and progressively, to proceed in the same way; under the spur of expanding needs and rising standards, they have bought for one street after another a first-class pavement, asking the engineers to give them a real good durable article. To meet the demand for durability the engineers worked out the granite block pavement on a concrete foundation. This was somewhat as if the furniture men offered to our typical householder clumsy cast-iron furniture: the first cost is very high and comfort and appropriate grace of appearance are sacrificed for the sake of durability.

Many other types of pavement have been experimented with, less durable than granite blocks; but even granite block pavement wears out faster than good and well-cared-for tables or chairs, and pavements have come to be regarded more in the way carpets are,—as things to be bought of as good quality as the purse will afford, to be used and swept and cleaned until they are worn out, and finally when they are no longer usable to be completely replaced. That is the common idea. But it would be a great deal fairer to compare many forms of street paving with a wooden house, which will last indefinitely if it is reshingled and repainted and otherwise repaired at sufficiently frequent intervals and at just the time when the repair begins to be needed, but which if the weather is permitted to make inroads upon it will rot and collapse within a few years after the roof ceases to keep out the rain and snow.

The undoubtedly bad and extravagantly costly pavements of the average American city are due to the prevailing weakness of

**EXTRAVAGANT PAVEMENTS
—THE REAL MEASURE
OF COST**

the permanent administrative staff and to the fact that it is easier to induce a city council to appropriate a big round sum for a complete new improvement than to vote funds for the unspectacular routine work of keeping the improvements already made from going to pieces by neglect. It is probably necessary to reckon with this common attitude of mind in Boulder as elsewhere, but surely it is worth the effort to present constantly and forcibly in connection with street pavements as with other improvement problems, the question of NET ANNUAL COST after allowing for depreciation and maintenance and interest charges AS THE PROPER MEASURE OF THE COST OF EVERY IMPROVEMENT whether its first cost be high or low.

Sheet asphalt is the standard smooth, clean, first-class pavement in American cities and there is often a tendency to adopt

ASPHALT

it as the ideal and use it regardless of circumstances. It is as a matter of fact open to serious objections for certain classes of streets; for example, it is very slippery and for that reason unfitted for any streets that are not nearly level; its volatile components are subject to evaporation and under light travel "it rots" out long before it wears out, so that the deterioration rate is abnormally high on streets of light traffic; its first cost is high and the method of repairing requires special apparatus and special technical experience, making its use relatively more costly and less satisfactory for small cities than for large cities, through putting the latter more at the mercy of the asphalt contractors.

Creosoted wood block pavement on a concrete foundation is a close competitor of sheet asphalt. It is less noisy, rather pleas-

anter to drive on, more slippery under some conditions and a trifle less

MODERN WOOD BLOCKS

slippery under others, almost equally cleanly, much more easily and simply repaired, probably much more durable under light traffic, and rather higher in first cost.

Another competitor now pushing asphalt rather hard is the

patented material called "bitulithic." It is less slippery than asphalt, about equally cleanly, is claimed to be more durable, though it has not been in use long enough to demonstrate this positively, and its first cost is not far different.

BITULITHIC

Paving brick makes a hard smooth surface, about as slippery as asphalt under some circumstances and much less so under others; it is harder and more noisy; it is not quite so easily cleaned, especially when it becomes worn; it wears out faster under heavy traffic; and it costs, usually, considerably less.

BRICK

Various special types of composition block pavements have been tried but have not established a standard position for themselves.

The various forms of stone block pavement need hardly be considered, for their advantages apply mainly to streets carrying a traffic heavier than any that the city of Boulder has to deal with at present or seems likely to have in the immediate future.

BLOCK PAVEMENTS

There remain to consider gravel and crushed stone roads. With the former Boulder has had a good deal of experience: they are known to be cheap in first cost and at their best, under light travel, to be very agreeable. They wear out rapidly and are apt to be dusty and muddy and otherwise dirty. It is probably fair to say, however, that if the construction of gravel roads were more scientifically done than it has been in Boulder in the past, and if they were more systematically repaired and maintained it would be possible on streets of light travel to have gravel roads that would be far more satisfactory than the article to which Boulder citizens have become accustomed and at an additional annual cost which would be trifling compared with that of any of the pavements discussed above.

GRAVEL

As to crushed stone roads, it is probable that most of the citizens and officials of Boulder who have not happened to travel

CRUSHED STONE

much in Europe or in certain very limited districts in this country, are under a serious misapprehension on this subject. The things called macadamized roads in a great many parts of this country are neither built in accordance with the principles which Macadam laid down nor are they maintained in such a manner as to get tolerably good results out of the construction, such as it is. We believe it to be a fact that under a proper system of systematic maintenance and repair any street in Boulder, with the possible exception of a few main thoroughfares, could be paved with a first-class crushed stone pavement and kept permanently smooth and in satisfactory condition for a small part of the annual cost of sheet asphalt or other high-priced pavement, and that the saving could be more profitably expended in other directions.

OBJECTIONS TO MACADAM

The chief objections to a macadam pavement for most of the streets of Boulder are that the wear is more rapid than when the mineral particles are firmly bonded together as in asphalt or bitulithic, that more dust is therefore produced, and that as it is difficult to clean off the dust and mud thoroughly without further injury to the pavement they are allowed to accumulate. The objection of the comparatively rapid wearing away of the surface and consequent roughness of pavement almost disappears under proper care and simply goes into the cost of maintenance. Proper cleaning and watering reduce the objection on the score of dust and mud to a reasonable minimum, adding still further to the maintenance cost. A crushed stone pavement merely put down and then almost neglected is a pretty poor investment, more so than a pavement of asphalt or brick, but one well laid and thoroughly well kept will give results on most of your streets of which the city can be proud and the annual cost of which, maintenance and all, will not be unreasonable.

It is true that the relatively dry climate of Colorado is less favorable to macadam than a moister one, tending to more dust and more rapid wear because the bond of the surface particles is more or less dependent upon moisture. For this reason it will

probably be advisable, especially on steep grades where the tendency to "ravel" during rainstorms is

BITUMINOUS BINDERS very marked, and upon any streets where automobiles come to be common with their notable disintegrating effect upon the road surface, to utilize some of the special binding materials introduced of late years for dust laying and protection against disintegrating action, such as asphaltic oil and the special coal tar preparations like "Tarvia." On streets of light traffic a good macadam, treated annually with a surfacing of Tarvia and stone-dust offers a surface having many of the advantages of a bitulithic or asphalt pavement at a very much lower cost. In our opinion, especially under the dryer climatic conditions of Colorado, it would be advisable to use a heavier application of Tarvia at the time of first construction than has been customary. The first cost is thereby slightly increased but the results should be enough better to justify the difference. This method of impregnating the road for a depth of an inch or more with Tarvia is really a long step in the direction of a bitulithic (or asphalt) pavement, in which the WHOLE mass of broken stone (or of sand) is impregnated with a bituminous binder instead of only a thin top layer.

In any experiments that may be tried in the use of Tarvia or similar coal tar preparations or asphalt it should be borne in mind that apparently very slight

**THE CAUSE OF SUCCESS
AND FAILURE WITH BI-
TUMINOUS BINDERS**

differences in method will change the results from success to utter failure. Success depends, first, upon getting the bituminous material of exactly the right composition, for which, practically speaking, reliance must be placed upon the knowledge and good faith of some concern that has had an extended and successful experience in producing material for just these uses; second, upon having the road metal in the right mechanical condition and thoroughly dry and sun-warmed, conditions easily obtained in Colorado; and third, upon heating the tar or asphalt to exactly the right temperature before applying it. It is not at all difficult to secure these conditions by the exercise of some intelligent painstaking care, but

the margin between success and complete failure will be quickly crossed by the least carelessness or neglect.

The asphaltic oils, from Texas or California, require less precision in use to get good results, whether applied straight or, as we believe to be better, in the form of an emulsion with water. But there

OIL TREATMENT

is no question, apart from practical advantages one way or the other, that the oil is in all respects much dirtier and less agreeable in its results. It is in fact quite offensive in appearance and often so in smell, and the particles of oily dust when they do get on to clothing or vehicles are a serious nuisance.

To sum up as to improved street pavements, we are inclined, for most localities in Boulder, to advise the use of macadam

SUMMARY AS TO PAVEMENTS

properly built and properly maintained, with systematic cleaning and repairs and either systematic watering or the use of Tarvia for bonding the surface. Where Tarvia is not used the watering should always be done by the City and not left to the discretion of the abutters, for it must be regarded not primarily as a method of mitigating the dust nuisance but as a means of preserving the bond of the road surface and prolonging the life of the road.

In the matter of sidewalks the standard generally adopted in Boulder is a line of slabs either of stone or cement, from four to six feet wide, laid in the turf between the property line and the street trees which follow the curb. The standard is a good one and we have little to offer by way of suggestion. There appears

SIDEWALKS

at present to be a prejudice in favor of the cement slabs based in part upon a popular misconception, to which it may be well to call attention. The preference for the cement is based upon the idea that the cement walks are ipso facto smoother and less liable to hold puddles of water and to offer irregular joints on which to stumble. A somewhat careful examination of the Boulder sidewalks after a rainstorm confirmed what has been our observation elsewhere that so far as cement walks of the SAME AGE as the stone walks do possess these advantages it is not due to the fact that they are

made of cement but to the fact that they are laid on proper foundation of well-drained stone, cinders, sand or other firm porous material. Most of the Boulder flagstones are sufficiently smooth, individually, not to hold puddles except where a stone has settled below its neighbor or has been cracked on account of the settlement of the foundation. Poorly laid cement walks after a few years develop just the same defects and are somewhat more liable to fracture under the same conditions. We regard the choice between stone and cement when equally well laid as an aesthetic rather than a practical one. Personally we find the texture of the stone the more agreeable, but it is a matter that turns on local surroundings more than upon any general considerations.

Another detail about the sidewalks is perhaps worth mentioning. It appears to be a common though not universal practice, in order to prevent the flooding of the

SIDEWALK EDGES

sidewalks and the stone paths leading up to the doors by the water used to irrigate the lawns, to dig little ditches about four inches wide and two or three inches deep in the turf along each side of the flagging. The appearance of these little gashes is certainly far from agreeable; it is indeed quite painful to the unaccustomed stranger; and assuming the practice to have resulted from a real practical need we have wondered if some better way could not be found for meeting the difficulty. In the case of cement walks it would be a simple matter at the time of construction to form a groove or narrow gutter in the cement close to its edge, like a border line. In the case of the flagstone walks a narrow piece of flagging set on edge like a curb, coming to the same level as the walk or a trifle above it but removed about two inches from its edge would form a similar little gutter. It would be neat and orderly and instead of being separated from the grass by the frequently renewed raw and ragged edge of the little dirt ditch the stone would be in pretty contact with the overhanging blades of grass.

Boulder is properly proud among Colorado towns on account of its numerous and large street trees. They are an ex-

STREET TREES

ample of the immense effect upon a town's appearance that may rapidly result from a popular custom once set agoing. The result is surely pleasing, yet as our function is not praise but suggestion we must point out how much better it might have been had the popular tree planting habit been better guided, and how much it can still

SILVER MAPLES AND TREE BUTCHERY

be improved for the future. Everyone must admit that the planting of silver maples and cottonwoods has been overdone. The reasons why it was overdone are not far to seek, but overdone it was. The silver maple is one of the most brittle of trees and short-lived at that. It is as little adapted as almost any tree could be to withstand the pressure of late and early snows upon its brittle branches, and the practice of tree-butchery frequently resorted to as a precaution against snow-breakage is ugly in the extreme.

Systematic annual pruning of a tree, even pruning so severe as to reduce the tree to a formal or geometrical outline, may be

SYSTEMATIC PRUNING

justifiable and proper under certain conditions, and it will result in a character of twig and branch formation which, although quite different from that of the tree under favorable natural conditions, yet has a certain orderliness, is indeed the natural response of the tree to a new force systematically applied to it, just as a certain other twig and branch formation is its natural and characteristic response to the conditions of a constantly wind-swept situation. In other words such a systematically pruned tree has a distinct and self-consistent character with a certain beauty of its own, which we may or may not think appropriate under certain circumstances, but which we must recognize as being good of its kind. But a tree which is unsystematically and unsympathetically lopped off at irregular intervals and places and is permitted to grow without restraint or care in the interval, is apt to look like nothing but a miserable cripple. It would be a great deal better either to let the silver maple alone and prune the broken branches after each storm or else to lop it off once for all level with the ground and put in some tougher and more permanent tree.

Another common defect of management in the Boulder

street trees is that they were planted close when they were small

CLOSE PLANTING

trees in order to secure a good immediate effect, and, as often happens where this is done, they were seldom thinned out when they began to crowd each other. Consequently in most of the streets the continuous foliage canopy has about twice as many trunks holding it up as is really necessary and the trees are less vigorous and healthy than they should be. In some cases it is just as well to accept the condition until the trees begin to fail seriously and then to make a new start with better trees; in others it would pay to thin out even now. It is a matter for close personal judgment by a competent man going over all the trees, block by block.

As to the kinds of trees suitable for street planting in Boulder it would be presumptuous for us to offer any positive

KINDS OF TREES

advice when you have at Boulder a thoroughly competent arboriculturist who has studied the subject for years. We refer to Mr. D. M. Andrews. We insert here a report from him upon the subject:

Street trees in general should be:

1st. Enduring: that is, reaching prime of life at a great age, of strong and vigorous but not necessarily rapid growth.

2nd. Of pleasing proportions.

3rd. Requiring a minimum amount of pruning or other attention.

4th. Free from insect pests or disease.

Street trees for Boulder in addition should be:

1st. Capable of sustaining or of shedding from the branches without injury a heavy weight of snow.

2nd. Able to make a symmetrical growth without tendency to lean or grow one-sided when exposed to prevailing westerly winds.

In the opinion of the writer the following named trees,

approximately in the order in which they are named, best meet the requirements stated above. Several other oaks may be substituted, or these interchanged to meet special requirements or personal preference. All the other trees named are selected for individual characters, and for which other related sorts cannot be well substituted, with the exception of the Scotch elm, instead of which certain horticultural forms of English elm, or certain types of American elm might be used if obtainable.

1. Thornless Honey Locust, *Cleditsobia triacanthos inermis*.
2. Red Oak, *Quercus rubra*.
3. White Oak, *Quercus alba*.
4. Horsechestnut, *Aesculus Hippocastaneum*.
5. Sugar Maple, *Acer saccharum*.
6. Western Catalpa, *Catalpa speciosa* (must be true).
7. American Ash, *Fraxinus Americana*.
8. European Linden, *Tilia Europaea*.
9. Pin Oak, *Quercus palustris*.
10. Scotch Elm, *Ulmus scabra*.
11. Norway Maple, *Acer platanoides*.
12. Kentucky Coffee Tree, *Gymnocladus canadensis*.

In using any of the trees in the above list or in experimenting with others or guiding the development of any of the existing street trees, the controlling

CONTROLLING PURPOSE
OF TREE PLANTING fact should always be borne in mind that the street does not exist for the purpose of growing arboricultural specimens but that the trees are grown for the purpose of contributing to the excellence of the street. A good general effect is the thing to aim at—one that shall be appropriate to the conditions and circumstances of a given street. The suitable general effect should be decided on first and then the trees so chosen, so planted, and so managed, whether by thinning or leaving thick, whether by pruning or letting alone, as to accomplish that result.

The kinds of effect that can be secured are infinitely va-

ried, happily enough, but there are certain distinct types, and some reference to them will make clearer what we mean when we say that a given effect ought to be chosen and then kept steadily in view in making every subsequent decision of detail, as to kinds of trees, spacing in the rows, location of rows, method and extent of pruning up the lower branches, pruning or non-pruning of sides and tops, etc., etc.

**TYPES OF TREE
PLANTING**

There are three marked types of tree-planting in use on straight, formal avenues and streets. The first is the over-arching type, in which the trees grow to such size and form that their branches meet or nearly meet across the street, forming an umbrageous tunnel or vaulting, which may be lofty and pointed in its form, as often with elms and old cottonwoods, or may be low and flat, as often with maples. In this type of avenue the commonest defect, especially where the straight vista is a long one, is inadequate height. Practically as well as aesthetically the systematic pruning up of the lower branches, not all at once but gradually, as the tree grows taller, is very important in order to provide free circulation of air and to make it possible to illuminate the street properly at night, as well as in order to give height reasonably well proportioned to the length of the vista and to give an impression of pleasant spaciousness. This type is and must remain the commonest type on streets of ordinary width, and the need of systematic pruning of the growing trees in order to develop tall, clean, healthy trunks and high crowns is one of the strong arguments for public control of the street trees. A few low-branched, crooked trees allowed to grow in a form quite different from the general run of trees on a street will interrupt the vista and spoil the general effect no matter how much pains may be taken with the rest.

The second type is the avenue which is open to the sky above but runs between high walls of foliage on either side. This is adapted only to avenues where the space between the rows of trees can be considerable. Most of our large-growing trees

OPEN AVENUE

will spread in time twenty-five to forty feet or so on each side of the trunk if they have space for full development, and elms will spread even further, so that in order to leave a clear space of respectable width between flanking masses of tall, free-growing foliage the trees must ordinarily be planted a hundred feet apart or thereabouts. But by choosing trees of tall and narrow form, as in the extreme case of the Lombardy Poplar, or by annual trimming of the side branches in the same way that a hedge is trimmed it is often possible to secure this type of avenue in a much more limited space; and of course in its younger stages an avenue of the over-arching type generally takes on for a few years this second form. For an avenue of impressive length, especially for one that has any splendid object at the end of the vista, this second type is often preferable to the first. There are many streets in Boulder that lead toward wonderful views of the mountains, but which are so completely over-arched by trees that they might just as well be in a suburb of Chicago for all that anyone can see when he travels on them. This second type of avenue cannot be classed as superior to the first, or as inferior; it is merely different, and therefore preferable under certain conditions. Often it would be a toss-up which to choose, but choice must be exercised and when the choice is made the necessary steps must be taken to make it effective by selecting the species of tree with discretion, and by discretion in placing the rows, spacing the trees in the rows, and guiding the growth of the trees thereafter.

A third type of avenue is one in which the trees instead of over-arching or enwalling the vista are mere decorative

**AVENUES DECORATED BY
SMALL TREES**

adjuncts, the sides of the avenue being really formed by the buildings. This means comparatively small trees, and is a type most appropriate in busy city boulevards where stores and tall buildings closely line the avenue, where large trees would be rather in the way and would cut off too much light from the windows. The type is common in French cities and would be here if our cities took more heed of the appearance of their streets. What we generally do in this country when a street becomes so thor-

oughly urban that the big trees are out of place and in the way is to kill them off one by one and put nothing in their place. The French set out small trees that ornament and shade the sidewalks without bothering anybody. In part they use trees of species that by nature remain small and in part they accomplish the result by persistent trimming of top and side branches so as to make a series of semi-formal leafy umbrellas. This type is well adapted to certain situations in Boulder where any high trees along the sides of the street would cut off fine views of the foothills that are well worth keeping open. Looking westward on Pearl Street from Twelfth, although the buildings along the sides of the street are far from lovely and although the whole foreground has a rather shabby, dusty, untidy appearance which the presence of trees would do much to obscure and palliate, yet a traveler in search of the beautiful is really grateful that the trees are out of the way as his eye sweeps up to the broad sunset sky above the serried foothills and the notch of Boulder Canon. It would be a pity to have this scene obscured by over-arching elms or cottonwoods, to say nothing of their possible interference with the shopping trade; but imagine the effect of lining each sidewalk with a row of handsome little trees growing no more than about twenty feet in height, masking the crude appearance of the buildings, giving shade to pedestrians, and forming a verdant, flanking foreground for the distant view without encroaching on it.

It is needless to go on to a discussion of variants of these types, because these will serve to make clear the principle that in street tree planting and in street tree maintenance, if you want to get good results you have got to make up your mind exactly what you want and then see that all the necessary steps are taken to produce just that particular thing—and not just “any old thing.”

It may be well, however, to point out that all of the above types refer to straight streets, of which the most striking feature is the vista which each presents; and that in all of those types a certain uniformity of treatment is essential from end to end of every

UNIFORM TREES IN
STRAIGHT STREETS

is the vista which each presents; and
that in all of those types a certain

vista. Specifically, one kind of tree and one method of treatment only should be adopted for each vista thus to be seen as a unit. When we come to crooked or curving streets, of which Boulder is bound to see more as houses push on to crooked ground, the case is radically altered. On a street that follows

**VARIED TREES ON
PICTURESQUE STREETS**

a gentle, sweeping curve, especially if the street be broad and dignified, it still may be desirable to maintain a dignified uniformity of trees, at least for considerable distances; but on streets and roads that are distinctly picturesque in type, whether built on a series of angles or on a series of curves, especially if they be comparatively narrow, as with mountain roads or private driveways, or many park drives, then uniformity of kind and size and shape and spacing in the trees that shade them ceases to be a virtue and becomes a discordant note, totally out of keeping with the character of the way itself. Here, as always in matters of art, it is not what you do, but how and where you do it that counts.

In most of the Boulder streets the straight alignment and limited width point definitely toward the use of a single

LOCATION OF TREES

kind of tree for each, so planted as to over-arch the street. Ordinarily the best location is the usual one, between the curb and the sidewalk; but sometimes it would be better to plant the trees between the sidewalk and the property line. This gives a greater distance between the two opposite rows of trees, which is sometimes desirable, even when an ultimate over-arching effect is aimed at, and is generally desirable when a vista permanently open to the sky is wanted. But it has also two practical advantages to commend it in all residential sections, where the buildings are set back from the street line. These advantages are, first, that the trees are much safer from injury by horses (a prolific cause of disease, decay and decrepitude in street trees); and second, that the tree roots are enabled to spread under the adjacent lawn and get much more moisture and nourishment than they are apt to get in the narrow strip between the paved roadway and the paved sidewalk.

This brings up the question of irrigation of street trees. Even in regions of much larger rainfall than Colorado it often

**IRRIGATION 'OF STREET
TREES**

becomes necessary to provide artificial irrigation for street trees if they are to flourish successfully under the very unnatural conditions of city highways. Two principal methods are employed, separately or in combination. One is to provide some system of sub-surface irrigation by laying tiles or blind drains in the soil at the time the tree is planted, connecting with one or more small boxes or drain pipes rising to the surface of the ground, through which in the dry season a large dose of water can be quickly run into the ground around the roots of the tree either by the use of a large hose connected with the regular street hydrants and moved quickly along from tree to tree, or by turning in a surface stream from an irrigating ditch in the usual manner. In Berlin and many German cities such sub-surface irrigation is customary, the watering hole of each tree being covered in some cases by a loose brick in the pavement of the sidewalk.

The alternative method is much simpler and cheaper to install but is troublesome and laborious in operation and precludes the maintenance of turf under the trees. It is to send a gang of men around once a month or so during the dry season to spade up and cultivate a patch of ground a few square yards in extent over the roots of each tree. When the soil is thus loosened a little dike is formed around the cultivated space and the area is flooded with water. The flooding is repeated once or twice if necessary and the ground is then smoothed over. This method is practically the same as that employed in orange groves and for other fruit trees in irrigation districts, but we have seen it employed on one of the fashionable avenues in the City of Berlin, and in most soils it is probably the more efficacious method because the loosening and cultivation of the surface soil is as valuable for a street tree as for a farm crop.

With a moderately clean soil which does not get too muddy when it is wet or form impalpable dust when dry, there is much

BARE EARTH SURFACES

less objection to clean, tidy, well-kept surfaces of bare earth than popular prejudice in America is apt to suppose, especially where such surfaces are well shaded by trees. Colorado has been settled mainly by people from the eastern states, which in turn received their traditions from England where, even more than in the eastern states, grass flourishes naturally and covers almost all unpaved surfaces that are not kept under cultivation or subjected to the severest wear and tear or darkened by the densest shade; so that most people in Colorado as a matter of habit or tradition tend to think of grass as the only proper and pleasing treatment for the surface of unpaved ground. We are not here arguing for the general substitution of bare earth for grass under the street trees: but we do mean to urge that there may be many places, especially in the leveler central and eastern parts of the city, where the soil is gravelly or sandy, and especially in places where the shade is dense or the wear and tear is heavy, in which it would be possible by proper attention to keep a surface of bare earth looking a great deal neater and better than an attempt at grass could be kept and at a small fraction of the cost, while incidentally it would simplify the problem of properly irrigating the trees. Only it must first be got into the heads of people that the presence of bare earth does not justify neglect and that such a surface needs to be raked and swept and kept in order like the floor of a house. But it takes less work to keep it in neat order than turf does in the Boulder climate.

In localities where there is a great deal of wear and tear on the surface, as in busy shopping districts, it becomes practically

**PAVED SIDEWALKS OVER
TREE ROOTS**

necessary to put down some hard pavement over practically the whole surface from curb to property line. Where this is done over the roots of established trees they may last a long time after the paving, but it is hard upon them and it makes the growth of young trees very slow and difficult. Unless some special precautions are taken in such cases for the permanent maintenance of the trees they are very apt to go. The best method, judging from the experiments of European cities where the

most attention has been given to these matters, is to lower the surface of the soil in which the tree is planted a few inches below the finished grade of the sidewalk, say about the level of the street gutter, and to lay that part of the sidewalk which comes over this soil area in the form of slabs, either of cast iron or of stone or reinforced concrete, supported at their edges only, with an air space between them and the surface of the soil. The sidewalk slabs can be lifted once a year or so and the soil cultivated and manured, while irrigating can easily be done at any time without disturbing the sidewalk at all. If the soil under the slabs is at or slightly below the level of the gutter and the curb has occasional openings in it the soil receives natural irrigation at every rainstorm and artificial irrigation is accomplished merely by turning a stream into the gutter when watering is required. A modification of the usual sub-surface irrigation system is one in which the holes which lead into the irrigation pipes or blind wells of the tree pits open out of the gutter in the same way as the above. But there is danger of over-watering by either of these methods except where the soil is very porous and well-drained.

To sum up in regard to street trees: The planting of trees in the streets and their maintenance or neglect may be left, and

**SUMMARY AS TO SHADE
TREES**

in many communities are left, to chance and private initiative. If this policy is pursued the inevitable result, with the growth of a city, is the gradual disappearance of street trees following a long period of raggedness and shabby decline. Half-hearted and unsystematic efforts on the part of the municipality may prolong the period of decline, arrest it sporadically, or sporadically establish new rows of shade trees; but if satisfactory results are to be secured the matter has to be taken up seriously and systematically, with a fair counting of the cost, because here as elsewhere it is impossible to get something for nothing and under the arduous conditions to be found in city streets any trees worth the having can be permanently maintained only by systematic and somewhat costly care—and that care must be directed not so much to immediate conditions and result as to

conditions and results years in the future, because the principal returns from any expenditures on street trees can be obtained only after a long period. It takes about twenty years before most planted trees begin to be really fine, and their lifetime thereafter, if wise precautions have been taken in planting and caring for them, is apt to be anywhere from twenty-five to a hundred years or more. The return is an annual one, and it is obvious that the biggest returns on any investment in the planting and maintenance of street trees are to be secured only when steps are taken to secure those returns during a long period of years after the time the trees have reached a respectable size.

The usual methods are such that city street trees begin to go to the bad long before they reach the period of their full value, and by far the major part of the expected return upon the investment is entirely lost.

In every city there are many streets where it would cost more to establish and maintain good and long-lived trees than they would be worth. In some streets it pays best to maintain cheap, quick-growing trees for a few years at a time, in some streets no trees at all, in some streets trees of a compact, small-growing habit, in others trees of great height and spread, like the American Elm. These questions can be intelligently decided only after full consideration of such questions as the width of street and sidewalk, the present and prospective character of occupancy and amount of travel, the character of the sub-soil and exposure, and the possibility and estimated cost of establishing and maintaining successfully certain alternative styles of street tree plantations.

To handle this street tree problem in a businesslike way each street or distinct portion of a street ought to be taken up on its own merits, in relation to its surroundings and conditions, and after reasonable inquiry into the facts and consultation with the abutters by hearings or otherwise, it should be decided what definite policy it will best pay to adopt in regard to trees in that street during the next fifty or seventy-

five years, considering the probable results of the proposed policy and facing the necessary cost fairly and squarely.

Next to the street trees the most conspicuous objects in the streets are the various necessary fixtures, such as lamp-posts,

STREET FIXTURES

hydrants, street name signs, mail-boxes, fire-alarm and police-telephone boxes, boxes or cans for papers and other waste, etc., and poles for the support of various electric wires, together with the wires which they carry. The first principle in regard to these fixtures is to combine them as much as possible so as to reduce the number of obstructions and of confusing objects on the sidewalks; the second principle is to make them as simple and as agreeably proportioned as possible, with little ornament, but of pleasing outline. As to the poles for the support of telephone and telegraph and electric light wires, the ultimate ideal is unquestionably their entire removal and the substitution of underground conduits, but as an immediate practical matter the effort should be to adhere more rigidly to the principle, already somewhat general in Boulder, of confining such poles and overhead wires to the alleys.

It is by no means a Utopian project, however, to undertake the gradual introduction of underground conduits for the

UNDERGROUND WIRES

wires, beginning with the central part of the city and gradually extending. But the thing must be taken up in a conservative, businesslike way with the electric service companies concerned and a reasonable policy adopted. It is true that in a community the size of Boulder the annual cost of an underground conduit service, allowing for the interest on the investment, would be higher than that of an overhead service, even allowing for the greater depreciation and repair charges of the latter; and added to this extra annual cost is the difficulty of financing the first investment for the conduits. But there is no doubt on the other hand that the gradual elimination of the overhead wires will be of very real advantage to the community and is worth paying for. The community must pay for it in the long run, for no good is to be obtained in the end by trying

to beat the electric service corporations out of a fair profit; but on the other hand the community ought to make sure that the companies do not screw an unfair profit out of it or give it a poorer equipment and service than it is entitled to get for the price it is willing to pay. In the matter of putting the wires underground either one of two policies may be followed: One is for the city to build and own the conduit, appropriating to that end a certain amount every year and planning the system in conference with the experts of the electric service corporations, and then require the companies to put their wires into the conduits district by district as they are completed; the other is to decide after thorough conference with the companies upon certain dates within which the wires are to be put underground in certain districts by the companies in their own conduits, and then hold them to a strict accountability for completing the work in each district on time. In either case both the public and the stockholders of the companies are entitled to a thorough investigation of costs and the determination of rates that shall be a fair compensation for the equipment and service provided, neither more nor less.

Few people realize the great importance of this matter of overhead wires as affecting the appearance of the city because custom gradually blunts our sensibility to the effect of the wires and poles. They are like an irritating, little noise to which one gets so accustomed as not to notice it at all until it ceases; then one suddenly becomes aware of a grateful, refreshing quietness.

In a city the only thing the eye can rest upon that is not necessarily controlled by man, either for good or bad, is the sky; and while we are most actively conscious of the objects on or near the ground, with which we have immediate practical concern, our feelings of pleasure or depression are largely dependent upon the subconscious effect of the ever-present sky, whether it be bright and soft and beautiful, or overcast with clouds or smoke, or obscured with ugly and inharmonious objects of

human interjection. Both in the slightness of the impression it ordinarily makes on the attention and in its immense real effect upon the general sense of pleasure or discomfort, the appearance of the sky and what is seen against it may be compared with the purity of the air habitually breathed or with the degree of noise or quiet in habitual surroundings. The nervous system can be adjusted to almost any constant surroundings so that they cease to be noticeable, no matter how noisy or how foul, but the effect of the conditions upon the health of the nervous system and upon the general sense of well-being does not cease when the attention becomes blunted.

In the matter of street lighting Boulder has a capital opportunity in the proposed municipal lighting plant, to be operated by the surplus head of the city water supply. With an excess of

STREET LIGHTING

available water power the city should be able to afford the luxury of the very best of lighting. Now, apart from the question of cost, one of the elements of excellence in street lighting, whether from the practical or aesthetic point of view, is the use of numerous well-distributed small units instead of a more limited number of very powerful units. Especially in a city like

ARC VERSUS INCANDESCENT LIGHTING

Boulder, where the streets are full of trees, powerful arc lights at relatively infrequent intervals give far less satisfactory results than numerous incandescent lights, because the trees are apt to throw large parts of the street into black shadows unless the lights are set so low as to dazzle and blind the eyes in approaching them, whereas the incandescent lights may be set below the foliage level without the slightest objection and give a much more uniform as well as a mellower light and more decorative effect. It is to be hoped, therefore, that incandescent lighting may be adopted as the standard, for the residence streets at all events.

It is hardly necessary to say that the design of the lamp-posts is an important matter, too generally treated with carelessness.

LAMP POSTS

A good deal of money has to be spent upon them and cast iron costs about the same amount per pound whether it is given the clumsy,

uninteresting, or ill-decorated form of some stock pattern or a really distinguished and beautiful form specially designed for the city by an able artist. A moderate investment in devising a first-class pattern for such posts is a very good investment.*

Other objects within the highway limits, street signs, hydrants, rubbish boxes, catch basin inlets, etc., and especially large structures, like bridges, offer in **ARTISTIC DESIGN OF MUNICIPAL CONSTRUCTION** their location and design an interminable series of problems, both large and small, calling for the joint application of technical knowledge, artistic skill and good common sense. In proportion as these qualities are jointly applied to all of such problems the streets of the city will improve and in proportion as any or all these qualities are left out of consideration the streets will suffer. It is only by unusual good fortune that a city can fill its service with men who are thoroughly and adequately strong in all three of the requisite qualities, and practically in order to accomplish good results the most important thing is that there should be a clear recognition of the natural human limitations of responsible officials and that they should be provided with assistants or with consulting advisors competent to help them out on their short suits. An official may be somewhat short on artistic skill or on technical knowledge or even on both provided he has common sense and the desire and opportunity to get the co-operation of people who are long where he is short, and he will get good results. But somehow or other all three of the above qualities must be brought to bear or the results will be relatively unsatisfactory.

Assuming that the leading responsible officials are reasonably long on common sense and honest desire for excellence and efficiency, it ought to be possible to secure as assistants, if a reasonably permanent tenure could be assured, men having both technical and artistic training. But aside from any doubts about the above premises, it is very hard to find assistants having a technical training in municipal construction work who have any artistic training at all. The artistic aspect of construction work

*For arc lights the form of support and lights introduced in the South Park System of Chicago and known as the Daniels System of boulevard lighting is worth careful consideration.

is so generally ignored in the training of civil engineers, and on the other had most architects and architectural draughtsmen are so lacking in the particular kind of technical knowledge required in municipal work, that the right combination is very hard to find. Men with a sound, professional training as landscape architects might come a little nearer to filling the bill than architects, but the number of such men available as municipal employees is too small to be worth mentioning. Practically dependence must be placed mainly on securing assistants whose training has been along engineering lines, leavened if possible by a small proportion who have had artistic training in landscape architecture, architecture or otherwise, and on supplementing this somewhat one-sided agency by the occasional or regular services of a consulting architect and a consulting landscape architect.

Of course, when it comes to the design of a school house or the laying out of a park, or the adoption of a radically new water supply or sewerage system, it is customary and proper to select and employ for that special undertaking an expert who has proved by his work elsewhere that he has special skill in dealing with such a problem. But it is neither convenient nor economical nor productive of harmonious results to parcel out all the minor constructional problems of a city among independent professional men. Up to a certain limit of magnitude and difficulty the problems ought to be dealt with by a departmental force, the responsible executive head of which is normally an engineer. In cities of moderate size there is one such department under a City Engineer, and in very large cities several such departments, under independent Chief Engineers. But in any case the work turned out by such city departments is apt to be of better all-round quality if the responsible executive head has the privilege of informal consultation with certain other experts, especially on artistic matters. The City of New York has recently established the office of Consulting Architect to the Board of Estimate and Apportionment, the holder of

which office is debarred from undertaking any architectural work for the city on his own account, but whose advice as a consultant is open to any of the city departments that prepare projects for construction to be passed on by the Board. The principle is a sound one and ought to be more generally applied.

Waterways and Related Park Opportunities

The principal waterway in Boulder is Boulder Creek, and its principal function, from which there is no escaping, is to carry off the storm-water which runs into it from the territory which it drains.

FLOODS

If, lulled by the security of a few seasons of small storms, the community permits the channel to be encroached upon, it will inevitably pay the price in destructive floods. So with the channel of Sunshine Canon and others of less importance. In the case of Boulder Creek the formation of the ground indicates that at one time or another the stream has spread or wandered over the whole of the low-lying part of the city. Its present banks in that section are low and the larger floods have always been relieved in the past by a great increase in the width of the stream whenever it has risen more than a few feet above its normal summer level. The fact that the lands nearest to the stream channel are so obviously subject to flooding has tended automatically to retard their occupation and keep them free for the passage of floods, but increasing land values are steadily increasing the inducements offered to the owner of any given parcel of these lands to fill it to a level above what he guesses

ENCROACHMENTS ON FLOOD PLAIN

the floods will reach and so build upon it. It is obvious that if this process goes on without the exercise of any control for the purpose of maintaining an adequate channel, the cheap, unoccupied low-lands over which the flood-waters now pass harmlessly away will all be filled up and occupied; and then when a big flood comes, larger than the restricted channel can carry, the flood is going to tear through streets and houses, doing immense damage. Again and again this little piece of history has repeated itself on stream after stream, in town after town; and after the damage from exceptional floods has come to be enormous the community has gone to work at further great expense to widen and otherwise increase the capacity of the storm channel, often

condemning buildings and building land of much value to secure the necessary relief.

It is well to point out in this connection that the City of Boston, through neglecting to take action to prevent encroachment on the channel of Stony Brook—a much smaller stream than Boulder Creek and much less torrential in character—was finally compelled by repeated flooding of streets and basements to undertake radical improvements which have cost to date upwards of two million dollars.

**HOW BOSTON PAID FOR
NEGLECTING ITS LITTLE
FLOOD PROBLEM**

Unless some systematic community action is taken for the regulation of the stream and its banks and flood channel one or the other of two serious economic wastes is bound to take place. Either a good deal of the low land near the stream will remain unimproved, idle, and neglected, tending to depreciate values near it and involving a serious loss of the opportunity afforded by its location near the heart of the town; or else this land will be filled and used for private purposes, thus restricting the flood channel of the stream and sooner or later causing calamitous floods.

**THE RESULTS OF
NEGLECTING BOULDER
CREEK**

This is on its face a plain, straightforward question of hydraulics and municipal common sense. If the people of Boulder only have the sense to take warning by the experience of other towns they will deal with it now, while it can be dealt with cheaply and easily, instead of waiting till a catastrophe forces them to remedy their neglect under conditions that will make a solution far more costly and less satisfactory.

What would be a businesslike procedure? First, to form a serious and painstaking estimate or forecast of the maximum volume of flood water which the creek is likely to have discharged into it in the future, based upon a careful compilation and study of all the existing records and reports of past floods and upon a comparison of the extent and character of the drainage area

**HOW TO DEAL WITH THE
FLOOD PROBLEM**

and the precipitation thereon with those of other comparable streams of which the flood records have been kept. With this estimate it is a relatively simple matter for a hydraulic engineer to figure how much of a channel must be left to provide free outlet for the expected flood without its being forced to tear through the streets.

It is a complicated technical investigation, but in principal it does not differ one whit from the process through which a woman goes when she looks at the bowl into which she is about to turn a can of peaches and makes up her mind whether it will hold what is in the can. Either it will or it won't, and she is a foolish woman if she gives no heed to the probabilities until the peaches slop over on the table.

Without attempting to anticipate the results of a careful investigation of the flood problem of Boulder Creek it is safe to say this: There are two general

TYPES OF TREATMENT types of channel adapted to meet such conditions as Boulder Creek presents. One is the relatively narrow walled channel of relatively great depth, deep enough or high-sided enough to take any expectable increase of flow without an appreciable widening of the stream. This may be called the artificial reproduction or imitation of a canon or gorge. The other provides a small shallow channel for the ordinary stages of the stream but permits the water when it rises above the level of this low-water channel to spread out and occupy a much broader flood-channel, which can carry it off without forcing it to rise much higher. This is of course an adaptation from the ordinary form of a natural river channel in lowland country. Where land values are very high and land is preoccupied by buildings, etc., so that the saving in width will pay for the cost of construction of the deep channel with its high, protecting walls and numerous incidental expenses, the former is generally employed even in flat ground, but where land values are lower the latter is apt to be employed. We are strongly inclined to believe that at least below the Twelfth Street bridge the latter will prove the more economical and satisfactory plan. Under

**INCIDENTAL VALUE OF
FLOOD CHANNEL MARGINS**

such a plan, in a city, one great incidental value attaches to the margins of flat land subject to occasional flooding which intervene between the ordinary channel and the outer embankments that limit the flood channel. With the exception of a few days in the year these "washes," as such lands are called in the English midlands, are dry ground, available for any kind of use not inconsistent with the free passage of the flood waters when the time comes. To make a "park" of such ground in the sense in which that much abused term is often applied, as indicating something very highly polished and exquisite with costly flowers and other decorations of a kind that

would be ruined by flooding, would be foolishness. But the plan of

A BOULDER CREEK "PARK" keeping open for public use near the heart of the city a simple piece of pretty bottom-land of the very sort that Boulder Creek has been flooding over for countless centuries, of growing a few tough old trees on it and a few bushes, and of keeping the main part of the ground as a simple, open common, where the children can play and over which the wonderful views of the foothills can be obtained at their best from the shaded paths and roads along the embankment edge—this would give a piece of recreation ground worth a great deal to the people. And at the same time it is probably the cheapest way of handling the flood problem of Boulder Creek.

Before discussing further the landscape treatment of the "washes" of Boulder Creek, in case of the adoption of the treatment we suggest for the flood channel, we should like to set forth certain considerations that have a general application to any parks or pleasure grounds that may be undertaken in the city.

The three great natural advantages attainable within the city of Boulder are: First, the climate, supplemented by ample water, without which the climate would become a curse instead of a blessing; second, the views toward the beautiful foothills; third, the eastward views from the higher

**FUNDAMENTALS
OF PARK DESIGN FOR
BOULDER**

ground in the western parts of the city out over the plains.

In a region of brilliant sunshine which at times becomes distinctly too hot for the greatest comfort and at times is sought

**THE OUTLOOK FROM
SHADE TO SUN**

for its grateful warmth by anyone who can find a sunny spot that is sheltered from the driving wind, two types of situation and of landscape become of especial value. One is the densely shaded promenade or grove from which one can look out upon the contrasting brilliancy of open sunshine and luminous air, and enjoy its brilliance the more for the contrast. To stroll or sit on a warm day beneath clean-stemmed trees through which the breeze may freely draw, to feel their canopy overhead protecting the eye from the glare of sky and sun, and to look out upon an open space bathed in the brilliant sunshine, even if it be but a little open courtyard or lawn or a street, is to taste one of the highest charms of the wonderful climate with which Boulder is blessed. The other type of situation is a nook sheltered from the search-

**THE SUNNY
SHELTERED CORNER**

ing winds by wall or hedge or mass of trees but freely open to the sun above. In either case one of the essentials is a certain amount of clear open space not obstructed by trees or buildings or anything rising much above the surface.

Again: if one would enjoy the view of the foothills or the occasional glimpse of the Arapahoe Peaks looming up over the notch of Boulder Canon from any place in the central or eastern part of the city he must bear in mind that houses and trees will completely shut off those views unless he can find a spot in front of which there is open ground in the line of view entirely free from such obstructions for a considerable distance.

Any intelligent effort in the way of providing public recreation grounds in Boulder and especially in the flatter eastern part thereof cannot fail to be profoundly influenced by the above considerations. Except where peculiar circumstances dictate some other treatment, the problem must be to secure, with whatever variation in detail and in expression, certain elements of design essential to utilizing the great natural resources of the situation;

**A SPECIAL TYPE OF RECRE-
ATION GROUND PROPER
FOR BOULDER**

a more or less densely shaded promenade generally surrounding and always contiguous to an open space which shall be preferably free from all obstructions rising above the level of the eye, and which shall be of such size and shape in relation to the height and character of the enclosing objects as to afford permanent views of the foothills from the promenade, and preferably from the open space itself, over a pleasing foreground. These essentials may be secured again and again without any sameness, indeed with infinite variation of character if proper skill be used. The shaded promenade may be a vine-clad arbor or a formal and orchard-like grove or avenue of trees; it may be a winding path that picks its way along within the margin of the most irregular and picturesque of varied plantations. The open space may be a garden all aglow with bloom, or a smooth, irrigated grass plat, or a field of alfalfa ready for the scythe, or the smooth, bare surface of a playground, or a wide basin of water where children could wade and play with boats or even go in swimming, or it may be the rough, unkempt but cleanly surface of a pasture. The principle is the same in any case, though the execution be indefinitely varied.

In the treatment of the "washes" of Boulder Creek this principle points to the concentration of the tree planting mostly

**THE DESIGN OF THE BOUL-
DER CREEK RESERVATION**

along the roads and paths of the bordering embankments, the careful studying out of the best views and the limiting of all other tree and shrub growth to locations that will never interfere with these views but merely afford them pleasing frames. The treatment of the remaining surface is something of a problem. Every requirement of landscape enjoyment would be met by laying it down in alfalfa and either cutting it for hay or pasturing it. Indeed it would be a simple and inexpensive way of maintaining a beautiful piece of park-like landscape to fence off the "washes" from the roads and paths of the enclosing embankment and turn cattle in to graze at so much per head. This would not prevent those who are unafraid of cows from strolling along the stream

or through the fields and it would certainly tend to form a very beautiful type of landscape excellently suited to the circumstances. No one can doubt this who has seen the little bits of pastured ground along the creek above the railroad, where gypsies or other campers have been in the habit of gathering and turning loose their animals to graze. If cattle are to be excluded from the "washes" and if they are opened to general trampling by the public, some experimenting will have to be done to find the best treatment of the surface; but whatever happens we hope the city will not be led into the foolish extravagance of trying to make an artificial clipped lawn of these areas. Such a treatment would be far less beautiful and far less appropriate, as well as far more costly, than to treat it as rough pasture or mowing land—just set apart to be seen and enjoyed from the ample paths and roads on its margin during all times of year, to serve as a simple open foreground to the lovely distant views, and to serve when the floods come down as a vent for their rising volume.

The width as well as the treatment of the proposed public holdings along Boulder Creek must be adjusted in detail according to land prices and local availability for park purposes as well as by hydraulic requirements, but a superficial study of the situation suggests the following approximate outline. Starting down stream, beginning at the Twelfth Street bridge where the land values are high, we advise limiting the control of the banks to a very narrow strip on each side, enough only to provide an adequate channel for the stream, with substantial walls to protect its banks in place of the present wooden bulkheads whenever their reconstruction is justified, with an ample foot-path shaded by a single row of trees along the north embankment and with some planting against the Twelfth Street lots on the south embankment. After getting beyond Twelfth Street lots the breadth of the embankment could be increased at small expense, giving room for more trees and for benches, etc.

**OUTLINE OF PROPOSED
PUBLIC HOLDINGS ALONG
BOULDER CREEK**

After reaching Arapahoe Avenue (by means of which vehicles can reach the banks of the stream from Twelfth Street without the necessity of any costly

RIVER DRIVE

new roadway through expensive property) the left bank of the creek would be bordered by a park drive and promenade, overlooking the water and commanding occasional views across it to the foothills. This boundary drive or street would be set at a grade just sufficiently high to protect the lands northeast of it from flooding and would at the same time form a very attractive new street for house frontage, thus tending to raise adjacent values considerably. It would reach 17th Street just north of the bridge, and would be continued east of 17th Street on a due east line, passing just south of the occupied lot on the southeast corner of 17th and Athens Streets.

On the south side of the stream below the Arapahoe Avenue bridge it would seem expedient to widen boldly and include the considerable tract of vacant level

PLAYFIELD

land lying between the railroad and the creek east of the lots which face on 12th Street. This tract would be very useful as a playfield and as an open space over which to enjoy the foothill views from the drive and path along the north bank already described. Where the houses have been built close to the stream bank just west of the 17th Street bridge, of course it would not pay to take any land, except the valueless land under water in the bed of the stream itself. The reason for acquiring the latter is to guard effectively against any encroachment upon the stream in connection with possible further improvements of this land and to put the city in a position to put up an embankment wall on the west side of the stream if it should at any time seem desirable. But since the city could not acquire any holdings above this bank at present without getting into rather heavy damages it is not advisable for the city to take over the burden of maintaining the protection of the bank itself against the wash of the stream.

East of 17th Street on the right bank a new street or park-

way already referred to should be laid out, starting from 17th Street by a curve just south of the bridge, passing south of Mr. Parce's house about on the line between his lot and that of the University, and rising by an easy grade along the steep hillside below the Hospital so as to reach the upper level about opposite the end of Palmer Street produced. Such a drive running along the edge of the bluff would command a superb view of the city with the mesas and foothills rising behind it to the north and northwest, with the valley of the creek in the foreground. Unless some such drive is built, this view, which is one of the most characteristic in the city, will be permanently lost to the public. The University originally commanded this very view, but the location of the railroad and the building up of intervening lots have already greatly impaired that outlook, and the process is still going on. Soon no one will get the benefit of this situation but some of the patients in the back rooms of the Hospital and those occupying the back rooms and back yards of a few private lots on University Avenue. The accompanying sketch shows the type of cross section we have had in mind for this drive and promenade. It is assumed to be taken at a point a little west of the line of Palmer Street. At the rear of the Hospital the road would be wholly in fill; at the upper end it would be perhaps wholly in cut. This drive would cross the County Road at or about the corner of University Avenue and continue on to the end of the ridge at 28th Street, where it might be expected to branch, one branch following along the south side of the creek on the low ground and the other extending as a thoroughfare to the southeast.

With the exception of the brick yard and a small dwelling near the County Road and of Mr. Parce's dwelling just east of 17th Street, all of which might be omitted from the purchases, the property between this proposed drive and the creek is of very little market value and should be secured for park purposes very cheaply. For park purposes it is decidedly valuable as the foreground to a series of inspiring views from the high level parkway,

and as the enclosure and protection of the landscape of the creek over which the views of the foothills are to be obtained from the low level parkway on the north bank of the creek.

Returning to the latter, there are some large vacant fields just west of the County Road and extending practically up to the

**RIVER DRIVE AND LARGE
ATHLETIC FIELD**

yard of the Lincoln School. This is the nearest point to the heart of the city and to the principal schools where a good sized field can be secured, and the purchase of it at present prices is very much to be desired. Between the County Road and the outfall of the city sewer a much more limited taking would suffice to protect the stream and afford an agreeable parkway. Indeed all that is needed in this whole section from 17th Street eastward is an inexpensive gravel road and some skillful thinning of the trees and brush to make a parkway of very remarkable beauty. It is at present such a difficult matter to make one's way along the creek through fences and thickets and other obstructions that we venture to guess there are very few citizens of Boulder who have any conception of the potential beauty of such a parkway as is here suggested. And always it is to be borne in mind that sooner or later the problem of controlling and caring for the flood waters of the creek will force the city to take control of

THE COST OF DELAY

the channel. If action is delayed too long the only result will be a costly piece of engineering construction serving no purpose other than the prevention of floods; whereas if the matter is taken in hand now the city will spend less money on the hydraulic improvement and get a beautiful parkway to boot.

We have made no examination of the creek banks below the sewer outfall, because there is no hurry about that part of the improvement, but it would seem desirable ultimately to extend the parkway indefinitely in the direction of Valmont and the lakes.

Just what to do in the neighborhood of the sewer outfall is a complicated question about which we have only certain general considerations to put before you.

SEWAGE DISPOSAL PLANT

The problem of a permanently suitable method of sewage disposal is one which the City of Boulder

will sooner or later have to face. At present the sewage is discharged with all its dangerous impurities into Boulder Creek a short distance below the town, and passes in a somewhat diluted condition into the several intakes that supply water to various localities further down the stream. Experience elsewhere indicates that considerations of public health will require these conditions to be remedied and that either voluntarily or under legal compulsion Boulder will have to assume the burden of disposing of its sewage without menace to the health of other communities.

Of late years under careful scientific study of the problem the method most generally adopted for the purification of municipal sewage has been the use of "bacterial filtration beds," so-called, in some of their many forms. The same results in transforming the dangerous organic matter of the sewage into harmless compounds have also been obtained, and to a great extent by identical natural processes, where the sewage has been applied not to bare filter beds but to cultivated and productive sewage farms. The chief reasons why the

SEWAGE FARMS

bare filter beds have been favored in American cities as against the irrigated sewage farm are, we believe, first, that the area required to deal with a given amount of sewage is smaller in the case of the bare beds, and second, that under ordinary conditions of municipal management, the farming is a more complicated business than city employees can be expected to carry on successfully, even though it might bring in enough income if skillfully handled to pay for a competent manager. Another reason is that in the East, where most of the development in sewage disposal methods has thus far taken place, irrigation farming is an unaccustomed idea and water is generally regarded merely as something to be got rid of in the easiest possible way. It is hardly necessary to say that the latter condition is entirely reversed at Boulder and that every economic reason points toward the utilization of the Boulder sewage for irrigation purposes. We have been given to understand that an offer has already been made to pay the city for the right to use the outflow from the sewer for irrigating private lands.

There appear to be two sound reasons for objecting to this method of dealing with the question and for preferring a sewage farm owned by the city. The first

REASON FOR A CITY SEWAGE FARM is a sanitary one. The primary purpose of the undertaking being to protect the public health it would be very unwise for the city to turn over the handling of this dangerous though useful material to a private party whose main object would not be to make sure of its purification, but to use it in the handiest way for irrigation. The second reason is that owing to the difficulty and cost of frequently changing the point of discharge of the sewage there would be little if any competition in bidding for its use and the city would be more or less at the mercy of the land owners with whom the first contracts were made. On the other hand if the sewage were applied to land owned by the city the business of growing crops on the irrigated land, under proper restrictions for insuring the sanitary disposal of the sewage and preventing the use of crops (like lettuce, etc.) of a sort that might endanger health through their contamination by sewage, could be leased out annually or at longer intervals to the highest bidder.

As the city grows to the eastward it would become necessary at intervals of some years to extend the sewer system, to acquire a new sewage farm and to dispose of the old one for other purposes, in part probably for building land and in part for parks and other public purposes.

Even while in use for its original purpose a sewage farm would have some park value, for if properly conducted it is in no way an unsightly or disagreeable spot, and though the general public could not be permitted to walk about in the irrigated area, there might very well be a public drive and promenade along the border overlooking the fields and commanding the mountain views beyond them. The natural place for such a farm would be on or near the banks of the creek, its precise location and extent being more or less closely determined by engineering considerations as to grade of outfall and probable volume of sewage to be handled.

Returning now to the 12th Street bridge and working up stream, it appears impracticable to secure any continuous drive-

**BOULDER CREEK ABOVE
TWELFTH STREET**

way or border street near the creek. It does seem practicable and desirable, however, to secure a margin of vacant land of varying width, most of it subject to occasional overflow. It is desirable here as elsewhere to avoid the complete obstruction of these "washes" by filling in right up to the edge of the creek because all such constriction of the channel tends inevitably to raise the flood level of the creek. If the public controls a comparatively narrow margin of the lowland on each side of the creek, and if trees are allowed to grow near the property line as a screen against the rather unattractive class of occupancy to be found in much of this section, and if too many trees are not permitted to grow along the stream banks so as to obstruct the valley, the immediate result will be to conserve and greatly enhance the views that can be obtained from all of the street bridges in crossing the creek. But even here these "washes" can be made of direct service for park purposes by means of a low level path reached by steps from the bridges and winding along the stream-side. This path should be formed of cement or tar concrete and should be so designed and built that it would offer no obstruction to the water when covered by floods and cause no eddies that would be likely to start a washout of the adjacent surface. Although the head-room would be very limited, such a path could pass under the existing bridges and form a continuous park path that would offer a very attractive stroll when the surroundings are decently cared for. Very likely people in Boulder have got so accustomed to thinking of the creek and its banks as a place to throw tin cans and rubbish that it may require too great a feat of the imagination to conceive of it as a pretty, shady spot with a clean, well-kept park path running beside the murmuring waters, but as a matter of fact such an ideal is quite easily attainable. Of course every time the creek is flooded the path will be put temporarily out of business, but the day after it goes down, when the caretaker has had time to sweep off a little mud or gravel here and there and pick up and burn the driftwood or

rubbish that may have lodged against the bridge abutments or the trees, it will all be as good as ever.

Next 12th Street the strip of low vacant land between the creek and the first building south of it and about an equal amount on the north ought thus to be acquired, running through on these lines to the railroad bridge and the "paper" location of 11th Street. West of 11th Street the south bank of the creek is occupied (on paper) by a narrow street or alley called Riverside Street which would be continued through as such to 9th Street. On the north side of the creek from 11th to 9th Street the taking line would be about parallel with the creek, starting from 11th Street on the line of the alley as laid out and meeting 9th Street just north of the angle where the latter turns to go over the bridge. A row of lots would be left between this taking line and the railroad and they would have frontage on the embankment roadway.

West of 9th Street on the north bank of the creek only a path, at varying levels, can be provided for. It would pass between the reduction works and the creek, under the railroad bridge, along a bulkhead between the Boyd mill and the creek and so along to the westward. On the south bank it is to be hoped that a street can be put through from 9th to 6th Street, passing just north of the Highland School grounds and the old house marked "Austin" on the large map, and that all the low land covered with interesting vegetation which lies between this line and the creek can be included for park purposes. West of 6th Street there is an alley or path for a short distance which ought to be extended through as a public path as far as the railroad. The creek is here bordered by a fine growth of trees, and despite the extreme difficulty of scrambling along the bank at present there are signs that it is a good deal used, probably for the most part by tramps and small boys. A proper public path which could be lighted and policed would do away with a nuisance here at the same time that it opened a pretty strolling place to decent people. At present such a path would dead-end against the railroad and anyone going beyond would have

to cross the railroad at grade as they do now; but ultimately it would be perfectly feasible to carry the path down the bank and under the railroad bridge in the creek bed, where of course it would be flooded whenever the creek rose but would ordinarily be entirely convenient. West of the railroad bridge lies a strip of land on the south side of the creek which is now entirely isolated between the stream and the railroad. A portion of it next the creek is prettily wooded and the higher open part backing on the railroad is good for building purposes if it could be made accessible. There is probably no market for it now, but it is to be considered whether it would not be worth while to arrange, after a few years, for parking the banks of the stream, putting in a park boundary street upon which lots backing on the railroad could face and putting in a bridge across the creek to connect with a street leading out to Pearl Street along the line of Sunshine Canon Creek.

This brings us to the problem of Sunshine Canon Creek, a torrential stream which has already played havoc more than once with improvements in its vicinity because people had not learned sufficient respect for its flood volume and had not arranged to give it space enough in which to sweep harmlessly down to Boulder Creek. We did not have time to study the problem carefully, as needs to be done, but this much is plain: That the city ought to take steps to lay out and put in order a proper and well-protected channel extending from the wooden culvert to the inverted syphon by which the Farmers' Ditch crosses Sunshine Canon Creek down across Pearl Street to Boulder Creek, and that when such an open channel is being laid out it would be a sensible and pleasing design to provide for a road and sidewalk on each side so that the open space of the channel and its banks may count as part of a street or parkway instead of being wasted in the back of a block. An incidental advantage is that such a channel is much more easily policed and kept in order if it runs in the midst of a parkway than if there are back yards abutting directly upon it.

Beyond the line of the Farmers' Ditch and Mountain Avenue, as the valley of the creek becomes more pronounced the park opportunity which it affords becomes more striking. The present creek bed and the low ground close to it on either side are a positive burden and drawback to the owners from the point of view of sub-division into lots, and they ought to be delighted to transfer them to the city to hold as a park, over which their lots on the northeasterly side would command a permanent view of the foothills over a most charming foreground.

It is not going to take the lot-buying public of Boulder very much longer to realize that when it is attracted to a lot on high ground because of the fine view **THE REAL ESTATE VALUE OF PERMANENT VIEWS** commanded thereby, the paying of any extra price on account of that view is sheer folly if there is another lot just across the street on which the next purchaser is certain to put up a house that will absolutely block the view. And per contra, those few lots which are so arranged that they have permanent command of fine views will fetch constantly growing prices with the growth in the number of people who appreciate such things and can pay for them.

Here is a notable case in point. By setting apart for park purposes a narrow strip of steep hillside and a piece of valley bottom washed by the torrential **A SPECIAL OPPORTUNITY** floods of Sunshine Canon Creek, and by laying out a parklike street at the edge of the valley, a row of lots can be obtained on the upland which not only will have permanent command of a view that will put them in a class apart from almost all of the lots with which they come into market competition, but will have a frontage on what would probably become one of the fashionable drives. This valley parking should certainly extend up to include the picturesque Green Rocks and ultimately something more than a narrow road ought to come within public control in the further part of Sunshine Canon.

It would be a beautiful thing to retain the whole slope from

the valley parkway described in the foregoing up to the Red Rocks as an open public space, but we doubt very much whether the city would do wisely to charge itself with the double burden of paying out cash for the market value of the land and depriving itself of the tax returns which would result from the development of most of it into house lots. It is a piece of land which is capable of development into a considerable number of residence lots of attractive and valuable kind; but it is equally capable of being very badly botched if it is lotted up in a thoughtless, commonplace way. If the latter is done the sellers of the land will be the losers to some extent, but the chief losers will be the purchasers and the city at large through failing to get what the opportunity entitles them to. The steep upper part of the slope and the Red Rocks themselves, together with the city reservoir, ought certainly to become a public park.

An opportunity almost equal to that presented by the north-east side of Sunshine Canon between Mountain Avenue and Mapleton Avenue as just described, existed, and is not yet finally lost, in the case of Mountain Avenue itself. The splendid views to the south and southwest from that street and from the houses on the north side of it are entirely at the mercy of the owners of the lots which slope steeply down from the opposite side of the Farmers' Ditch. These lots have not been so built upon as to obstruct the view thus far, because they are steep, poor lots upon which it would be relatively costly to erect houses; but it is only a question of time before the demand for lots in this locality will induce people to go to the expense of propping up buildings there, and then good-bye to the view. If it were only a matter of transferring the control and enjoyment of the view from one set of house owners to another the public would have no cause to worry about it; but the fact is that this process if it is allowed to take place will mean that the public, which can now enjoy the view from the street, would also be the loser, and the command of the view would be transferred from the fronts of one set of houses to

the backs of another set. The park commission ought to buy or condemn the hillside lots below the Farmers' Ditch from the point where it crosses Spruce Street to where it crosses Sunshine Canon Creek, but the owners of the lots north of Mountain Avenue could well afford as a matter of investment to meet the whole cost of such a park taking themselves rather than let the situation go by default.

In connection with this park taking some intelligent treatment of the margins of the Farmers' Ditch with a shady path and

**TREATMENT OF
FARMERS' DITCH**

benches would of course be undertaken, and a good deal of skill should

be utilized to make this a pleasant shady spot for people to stroll and sit and enjoy the view, but without allowing any trees to interfere unduly with the views from the street and from the houses north of it. This means careful study on the spot and the limitation of the foliage to exactly the right places. Not improbably it would mean, in part, recourse to systematic pruning, or to the use of a vine-clad arbor or pergola for shading part of the path instead of trees, but it might be possible to accomplish the result by selecting small trees of low habit and placing them very carefully. Already there has been some manipulation of the natural growth along the ditch by pruning, apparently to improve views from houses, on the opposite side of the street, but it has neither been systematic nor agreeable in its general effect.

The presence of the Farmers' Ditch is a very happy feature here, as a part of a public promenade. Given sunshine and breeze and the wonderful plunging view across the valley to rugged mountains bathed in sunlight; given shade from the direct glare of the sun and sky, easily to be obtained by planting; the one thing wanted to complete the situation is water, and the quiet flowing canal on its way to irrigate the fields beyond the city gives the very note that is needed. To be sure its banks are here shabby and neglected, the vegetation is weedy and an appearance of squalor is more or less in evidence, so that a superficial observer might turn away without feeling the least interest in the ditch. But all the essential elements of the most beautiful scenes of Italy

are here, waiting only a little patient, skillful care to unite them into a little picture of paradise.

Indeed, there is nearby, although without the distant view and without the outlook from shade into sunlit space which is the soul of this situation, an example which suggests the charm that can be found in the simple combination of the quiet, flowing water of the irrigating ditch with a little well-kept foliage. At several points between Spruce Street and the Mapleton School the so-called ditch, in passing through a garden, becomes the central feature of a really charming scene. The stiff walling of the banks and the raising of the adjacent ground quite high above the water level makes the water count for less than it might, and we can call to mind many more lovely gardens bordering canals in European countries where the people have acquired a greater knack at such things; but here and anywhere a considerable degree of charm is felt the very moment anyone takes care of the borders of such an irrigating stream in an appreciative spirit. The hand of a good housekeeper is the thing most essentially needed, doing away with dirt and slatternly neglect, but not changing everything into a rigid and mechanical formalism.

We are inclined to dwell upon this point, because not only in the Farmers' Ditch but in the many other irrigating channels which traverse the city in so many quarters Boulder has what seems to us a veritable treasure of municipal decorations, now for the most part neglected and defaced, but all retaining their essential elements unspoiled and ready to shed beauty all about them if only given a proper setting.

Among those people of every generation and every race who have most enjoyed life and the beauty of the world about them, but especially among people dwelling in climates of sunshine, blue skies and dry air, the testimony is overwhelming, whether we look to the poets and to literary records of the enjoyment of beauty, or

to painters, or to gardens themselves; that living water, glancing in the sunlight and the shadow, is one of the most refreshing, cheerful, lovely elements that can be introduced into any scene. Whether it be spring or jet or fountain, picturesque cascade or smooth overpouring of mill-dam, meandering brook or prim canal, the essential beauty persists throughout; and only the signs of human contempt, foul contamination and slovenly surroundings, can obscure the natural beauty of water in the open air. A thing that strikes the easterner unaccustomed to the irrigating ditch, is that however neglected and ignored such a ditch may be as to its banks and surroundings there is something about it radically different from the ditches he is familiar with at home; a something that makes it far more attractive, more suggestive of pleasant possibilities. The feeling is hard to analyze, but it arises, perhaps, mainly from two causes. First, the water of the ditches is relatively clean and sparkling; and second, it is elevated close to the level of the adjacent ground, or even above it, thus catching the sunlight and holding the eye, and expressing the fact that it is cared for and conveyed as a thing of value destined for human use, instead of being sunk in a drainage ditch as far below the surface as possible, rejected and considered only as something to be got rid of quickly and completely. If the inherent beauty of the water of the irrigating channels were supplemented by such treatment of their immediate borders as would remove the unpleasant associations that now in many places attach to them, such treatment as would bring out and enhance the natural associations of refreshment and abundance that are inseparable from them and would re-enforce their intrinsic charm, these channels alone would serve to make Boulder a place of high civic beauty.

If only people could be got to realize that while they are looking for beauty in things which have no use except for decorative purposes, the highest possible beauty is to be found nine times out of ten in the most utilitarian things when perfected and treated as worthy of respect and loving care, they would be saved

**AN AESTHETIC
PREDICAMENT**

a vast deal of extravagant and foolish expenditure which now leads to confusion, disharmony and ugliness though made in the vain hope of achieving beauty. It is the peculiar difficulty of such an awakening to the value of beauty in the scheme of life as is now being manifested all over our country, that people whose interest has been largely concentrated upon utilitarian things from the commercial standpoint are apt, when they do awaken to the value of beauty and set to work to get their share of the enjoyment of it, to look anywhere else for it rather than in the familiar things which they have always regarded as of commercial or practical interest only, not at all realizing that the lack of beauty or the positive ugliness of these things is due solely to the misshaping of them by their own narrow commercialism and that of others like them.

We trust the good people of Boulder will pardon us for this preachment. They are no worse sinners than most of us in this great, prosperous, well-meaning nation, where opportunities are so numerous that we spend all our energies trying to grasp more of them than we can hold and so have no time left in which really to live. It is merely that a person is more vividly struck by examples of foolish waste of a kind new to him than by those to which he has become accustomed; so when Boulder is visited by an eastern stranger who has an eye for beauty and some acquaintance with the use to which water is put in the gardens and cities of older countries he cannot fail to be strikingly impressed with the neglect of what seems to him an extraordinary opportunity for civic beauty.

There are several canals in which the city has a shareholder's interest in addition to its powers of general control, and along the banks of most of these the city has a right-of-way. Many indeed are within the limits of streets or public alleys, already adequate in width or capable of being widened at slight expense so as to provide the essential elements for the public enjoyment of the opportunity which the waterway presents.

**HOW TO GET PARK VALUE
FROM THE DITCHES**

What are those essentials?

First, convenient provision for the public to pass or to stop where it can enjoy the opportunity. This may mean no more than the roadway and sidewalks of a street within which the waterway occurs, or even a bridge carrying some street over a waterway in such a manner that those crossing it can get a pleasant view over a rail or parapet designed to present the view to the best advantage. Or it may mean a special path running along near the water with occasional benches at the more inviting spots; and from that anything up to summer-houses and refreshment booths and concert groves along the banks of waterways, with all of the incidental provisions for public comfort and convenience that attend upon public parks. The only vital thing in this regard is that convenient, safe and decent provision be made in some manner for the coming and going and pausing of the people where they can enjoy the beauty that is offered. Civic beauty is worthless, even if it can be said to exist at all, where it is not seen and enjoyed by the people.

Second, offensive, foul and ugly things, where they come into view, should be done away with, made over, or obscured by foliage or otherwise, so far as possible; a general impression that the place is regarded by someone as worth caring for, as expressed by the fact that it is always swept and garnished, has a great deal to do with the extent to which others will care for it and be able to appreciate it.

Third, agreeable scenes and compositions should be noted and enhanced, or created, mainly by such control of light and shade and of enclosing and framing masses as can readily be effected through controlling the disposition of the foliage of trees and bushes. Along many of the ditches that run through alleys or on private rights-of-way there are many trees and bushes already present in combination with the water and the sky very pretty scenes and which need only to be supplemented by a good path and a few benches and an impression of good order and solicitous appreciation to become ready-made park spots of the highest value. In many other places judicious removals and a very moderate amount of supplementary planting would soon

bring similar results. In other places the foliage element is still to be supplied by planting.

Fourth, in places a certain amount of manipulation of the edges of the channel or of the adjacent surface of the ground may be called for in order to harmonize these elements with the general effect of the scene of which they form a part. Fortunately the volume of water is comparatively constant and its surface is normally but little below the level of the banks, so that the channels just as they now are give that ever-delightful impression of brimming abundance and of intimacy of relation between the surface of the water and that of the ground. Generally speaking, the more closely on a level they can be and the more intimate their relation the happier will be the result. Where the general impression of the scene is one of formality, of conspicuous regularity of order in its dominant features, the margin of the water may need some rectification to bring it into harmony with this impression; where the general effect is notably picturesque and informal it may be that some inharmoniously formal lines in the canal could be to advantage modified or obscured; not infrequently, especially where a path comes next to the ditch, it may be desirable to introduce a simple curbing or a piece of wall (mostly below the water level) to hold the earth from crumbling or slumping. But generally speaking it is better to avoid the use of walls or banks which would have the effect of depressing the water below the adjacent ground by more than a very small fraction of the width of the stream. If this mistake is avoided the water will be all right anyhow, and it will be just as well to do nothing to its margin except what is really needed as a practical matter for the proper maintenance of the ditch. In the case of the little ditches that run along in the parking of so many of the streets in the easterly part of the town, the boards which form their sides rise just to the level of the ground and are generally overhung with grass that gets a delightful, fresh richness from the water. The effect is charming and it would seem a pity to substitute a conspicuous and rigidly formal curbing either of concrete or stone and the substitution of a perfectly smooth bottom for one made of

rough cobblestones takes out an element of interest and beauty for no sufficient reason, for the sparkle and dance of the water as it runs over the cobbles is part of its life and charm. The boards must give way for something more permanent, certainly, because their maintenance is troublesome and expensive. But why not substitute for them thin slabs of local sandstone of irregular lengths set at the same height as the present edgings so that the grass will overgrow them somewhat as it now does the plank? And why not use the same old cobble pavement for the bottom?

Of the larger waterways the Beasley Ditch was the only one of which we made a complete examination throughout its length within the city. With the possible

BEASLEY DITCH

exception of one or two short passages we found that it would be possible to convert this ditch and its margins into a very attractive public promenade at surprisingly small expense. From 12th Street to 19th Street, for example, it runs mostly through a public alley not used as a thoroughfare for other purposes, and by the acquisition of a few bits of vacant land, the opening of a good path, and a small amount of thinning and planting, the thing would be done; while just north of 21st Street the ditch passes through or borders a piece of land excellently adapted for local park purposes and can be made to add much to its park value if acquired. It is however, useless to discuss these possibilities in detail in view of the proposition since called to our attention for a great increase in the capacity of the Beasley Ditch. This will involve, of course, an entire change of conditions all along the route and radical changes in many streets. The matter should be taken up by the city and the promoters of the project in a spirit of intelligent co-operation and a well-conceived plan should be adopted that will take into account the hydraulic requirements, the result upon the street system, and the opportunities for public recreation afforded by the banks of the canal if properly utilized. One suggestion which

COUNTY ROAD BOULEVARD we were prepared to offer in any case appears still more appropriate in view of the probable changes in the Beasley Ditch. It is that in widening the County Road and extending it north from Pearl

street past the east end of Lovers' Hill as a great, cross-town thoroughfare, the Beasley Ditch, so far as it occupies the line of the street, be treated as a formal ornamental canal or basin running down the center of the boulevard, with a fairly wide border of grass on either hand and flanking rows of trees on the edges of the two roadways that would border this parking.

We cannot too urgently point out the facts that on the one hand the eastern part of the city is the region where the topography makes possible the easiest, most convenient and most inexpensive urban development, where transportation facilities by roadway and by trolley can be most easily and cheaply perfected and extended, and where, by consequence, is likely to occur the principal development of dwelling places for people of small or moderate means, and that on the other hand the continued attractiveness of this flat region is closely dependent upon the maintenance of public open spaces, sufficient to preserve the views of the mountains and to afford the sunny openings with contrasting shady or sheltered promenades which are requisite to the full enjoyment of the climate and which are absolutely unattainable on fifty-foot lots occupying level ground. The need has not yet been strongly felt, partly because there are so many vacant lots scattered among those already occupied or at least within easy reach, and partly because people have not thought much about the basic physical advantages which make Boulder a better place to live in than other cities of the same size and tax rate. They must think about them and preserve them if they would not kill the goose that lays their golden eggs.

The County Road boulevard suggested above and the proposed parkway along Boulder Creek would be good examples of the sort of thing that is needed, but a considerable number of local parks and squares ought also to be acquired.

Parks and Other Public Open Spaces

Not only the eastern part of the city but all parts ought to be provided with local parks, some to be used primarily for playgrounds, others mainly or wholly for more sedate recreation, all contributing to the agreeableness of the town.

Every home in the city ought to be within about a quarter of a mile of a good playground and of a spot where older people

THE PEOPLE AND THE CITY PLAN

can take their exercise or their ease in the open air under pleasant surroundings and in the presence of a fine view or at least of such breadth of sunlighted open space as is wholly beyond the means of most to attain on their own property. The man who can afford to own a couple of acres in the outskirts of the city, or one of the limited number of sites on the commanding eminences near it and who can pay for the relatively high cost of the roads or streets required to make such sites available, and who can keep a carriage or an automobile to take him back and forth, is able to look out for himself. If he fails to make intelligent use of the opportunities which Boulder presents for the enjoyment of life, it is due mainly to his own lack of appreciation and initiative. But for the majority of people, whose means are limited, who have neither the financial strength nor the physical strength and mental aggressiveness that would enable them to seize for their own exclusive use the means of enjoying adequately those precious commodities, air and sunlight, and that subtle promoter of health and cheerfulness, the sense of spaciousness and freedom—for these, the great body of the citizens, a co-operative, democratic method of attaining these ends must be sought.

The standard house lot in Boulder appears to be 50 feet wide by about 150 feet deep, although a tendency is apparent through

BACK YARDS VS. PARKS

the uncontrolled operation of supply and demand to reduce the size of lots as well as the width of streets. To reduce the depth of the lots from 150 to 125 feet would mean, even if there were no cor-

responding reduction in width, that 1-6 of the usable ground after subtracting streets would be left over. If this amount of space were set apart for joint use in the form of playgrounds, squares, and local parks it would mean that every half mile square of the city would have not less than 16 to 20 acres of public grounds. No one who considers this proposition for a moment can doubt that the average householder with a 150-foot lot is in no such enviable position, with his extra 25 feet at the back end of his back yard, all shut in by other people's houses, as he would be with a lot measuring 50 x 125 feet and the use of a big, safe playground for his children within less than a quarter of a mile of his house and the use of pleasant parks and squares close at hand on every side of a size sufficient to command the beautiful views which he is now unable to see to advantage unless he goes entirely outside of the built-up city.

The point is worth pausing over a moment. A given tract of land half a mile square, provided with streets occupying a third of the total area will subdivide in

DEEP LOTS AND NO PARKS 619 lots of the standard Boulder size of 50 x 150 feet. In such a district, when the lots are all occupied, there will be no playgrounds for the children except the streets and the cramped back yards, there will be no parks or squares or other open ground whatever, no views of mountain or plain except an occasional glimpse between the chimney pots. If on the same tract, with the same area in streets the same number

SHALLOWER LOTS PLUS PARKS of houses should be erected on lots 50 by 125 feet in size, there would be left over 17.7 acres for purposes of public recreation. This would be more than enough, if well arranged, to assure for all time that every boy and young man who will ever live in that district shall have opportunity and inducement near his own home to play baseball and all the other vigorous outdoor games that make for a sound body, a clean mind and a healthy nervous system; that space could be set apart for a swimming pool to be put in operation whenever the neighborhood or the city might feel disposed to pay for constructing it and supplying the water; that

the little children could have a shallow pool of their own with a clean, sandy beach and bottom where they could wade and play with toy boats and make sand pies and forts as well as if they were to be taken thousands of miles to the ocean beach itself; that for all time the dwellers in that district would have only to walk two or three blocks or so to find a pleasant open spot with shady paths and benches for summer use, looking out upon a cheerful prospect, with sheltered sunny nooks and covered benches for the season when cold or driving wind makes walking in the streets unpleasant and tends to keep the people closely housed.

Again we say that no sane man can doubt the advantages of the latter method of subdivision, with its slightly smaller lots supplemented by parks, if he will take note of the trifling additional use which the average householder derives from the deeper lots of the old part of the town as compared with the shallower lots in other localities. That the average householder is reason-

**LOTS ARE GETTING
SHALLOWER**

ably well content with the shallower lot, even where he gets no parks at all in compensation, is proved by the fact that he does not hesitate to buy the shallower lots. He is evidently not seriously influenced in selecting his abode by the fact that lots in the University Terrace Subdivision are nearly 20 per cent. shallower than the lots in East Boulder.

But if the lots are being made shallower why does the householder get no benefit of the saving in the form of public recreation grounds? Simply because he

**BUT NO PARKS ARE MADE
FROM THE SAVINGS**

does not insist that his agent and representative, the City Government, shall look out for his obvious interests in due season, and make the laying out of a reasonable percentage of public recreation ground as much a matter of course in the acceptance of a new subdivision as the laying out of streets. They should both be regarded as conditions precedent to the city's furnishing the means for exploiting the land into building lots by providing water, sewerage, street lighting, policing and other urban advantages. The burden of the cost of setting apart such local recreation grounds should normally fall

upon the districts particularly benefited. It may fairly be placed upon the land-owners; who have the option of recouping themselves for the value of the land thus devoted to neighborhood uses either by dividing their remaining land into smaller lots, made acceptable by the presence of the parks and playgrounds, or by charging higher prices for the standard size of lot, the choice depending on the demands of the market.

Under the present system the lots are being made smaller, but the space thus saved is used not for parks but only for more lots; to the manifest detriment of the conditions of life in the city; and to whose benefit?

Not to the land-owners as a whole, certainly; for since the condition of the individual householder is plainly less satisfactory

WHO BENEFITS FROM with the smaller lots and without
ILLIBERAL SUBDIVISIONS? the local parks, it simply means that the demand for lots in Boulder will be less keen than would otherwise be the case and the value per lot will average lower; which is only another way of saying that the land value per family of residents will be less, or that the total land value of the city per thousand of population will be less. Incidentally its growth will be slower because of its lesser attractiveness. With a slower growth of population and a lower total of land values per thousand of population it is obvious that the less attractive method of development into which Boulder is now drifting tends to retard the growth of the total land values in geometric ratio.

Who does benefit?

No process goes on actively under the pressure of uncontrolled commercial motives unless somebody sees a profit in it.

The immediate and obvious results of curtailing at every possible point the amount of city land used per family, in lot and
HOW THE PRESENT SYSTEM street and park and otherwise, is to
WORKS make a city more compact, to make it spread more slowly, and to concentrate the population, and therefore the total land values which arise from the demand for

housing space, upon a more limited area. If the owner of a tract of undeveloped land on the immediate outskirts of the city's growth, by means of laying out as narrow streets and as small lots as he is able to market, and by means of omitting from his subdivision any squares or parks or other provision for public recreation, can succeed in concentrating upon his land say 5 per cent. of the city's total growth in population during the succeeding decade, together with a correspondingly large share in the city's total increment in land values during the same period, and if he can sell out and realize upon this increment, it is obvious he is better off, commercially, than if a more enlightened public policy controlling the method of subdivision had led to a 25 per cent. greater increase in the city's total land values but prevented him from gobbling more than 3 per cent. of it.

In other words, under the present happy-go-lucky method of commercial exploitation of the increment in land values, the few **AN UNCONTROLLED MONOPOLY** people who happen, by chance or foresight, to be possessed at any given time of the lands on the edge of urban growth are practically permitted to establish an undesirable density of urban development at their own discretion and for their own immediate financial benefit, at the direct expense of all the other land-owners in the city, who would of course be the gainers by a more widely diffused increment.

There is nothing essentially unfair in the game of land speculation, and the biggest profits in the long run go to the shrewdest and most expert players; the values of undeveloped land on the outskirts of a city are market values which take into account the chances each piece offers for scooping some of the "unearned increment;" so that there is, perhaps, no great need to worry over the fact that the present system enables the skillful players to make a profit at the expense of those who are so unfortunate as to be holding property that lies either outside of the zone of sharply rising prices or inside of that zone in the district of improved property and relatively stable values.

But it is manifestly to the disadvantage of the community at large, to the majority of land-owners in the long run, and

BUT THE PUBLIC SUFFERS emphatically to every wage-earner
IN THE END and every family dependent upon a salary or upon an income derived from non-speculative investments, that the players of the game of land speculation, interesting and legitimate though it be, should be permitted to make the city less pleasant, convenient and healthful to live in, and of a slower growth and smaller total valuation than it can perfectly well be made if the community simply insists on such a provision of streets and such a provision of public recreation grounds and such other arrangements as will give the best practicable results from the point of view of those who have got to live in the city after it is built. We are not here concerned with any socialistic projects for appropriating the "unearned increment" to the people. As we have previously pointed out the total land values, and therefore the total "unearned increment" passing into the hands of land-owners, would be larger in case there were an adequate allowance of park area than without it. What we are concerned

THE PUBLIC MUST PROTECT with is such action by the community
ITSELF AND THE LIBERAL as will result in the invariable setting
LAND OWNERS BY CONTROLLING apart of the desirable proportion
THE CHARACTER OF of public open spaces as a
SUBDIVISIONS

necessary incident of the subdivision of land and thus remove the pressure under which an illiberal and short-sighted policy is forced, as a plain matter of business, upon the promoters who now determine the layout of subdivisions. It is possible that such action might tend to reduce the purely speculative profit in putting lots upon the market, and it might be expected to arouse opposition from those who are, or who think they are, particularly skillful in the speculative game; but for the main body of real estate owners as well as for all the rest of the community such action would be distinctly advantageous.

What does such a public policy involve? Briefly, that in or for every neighborhood or district which is subdivided and added

to the city a certain minimum per centage shall be set apart for public recreation grounds. What this minimum should be we will discuss later. The method of setting it apart, in the case of a considerable subdivision, or district under a single ownership would normally be dedication, as in the case of streets; but in the case of a subdivision owned by a number of different parties the city might have to purchase or condemn the necessary tracts and assess the cost of them upon the whole district benefitted. In districts already fully subdivided and largely occupied a similar method may be followed except that since the whole city is short of local parks it would be fair to charge a part or the whole of the cost in such cases to the general fund.

As to the selection of the areas to be set apart for local park purposes, it is of prime importance that they should be equitably distributed, and preferably

**SELECTION OF LOCAL
PARK AREAS** so that no neighborhood will be more than about a quarter of a mile from the areas that serve it. With the exception of certain special sites to be mentioned later which have peculiar advantages for certain park purposes, the chief points to be considered in selecting land for local parks are cheapness, and accessibility to the people who will use them. The best plan, always assuming the necessary funds to be available, is first to decide upon the general locality within which the local park is needed, to examine carefully the assessed valuations of property within the locality and to select (tentatively) one or more sites which seem promising as to location and cheapness. The second step is for the commission to obtain options on such of the lands within the limits of the tentative site or sites as can be put under favorable options. The third step is to ask publicly for the tender of any lands within the locality for park purposes and to hold public hearings thereon; and the final step is, in the light of all the information thus secured, to select definitely the site and boundaries of the park or playground and take the land by condemnation proceedings. The land taken will ordinarily consist in whole or in part of tracts upon which the commission has obtained options or public tenders of sale at rea-

sonable prices and for such lands it can settle at once at the agreed price, while the price of other lots required to secure proper boundaries will be determined under condemnation proceedings either by agreement or before a jury. It is far better to proceed in this way than to buy or accept certain pieces of land, no matter how favorable the terms may be, and subsequently acquire adjacent pieces for the rectification of boundaries or completion of the requisite area; because the very establishment of a park renders the adjacent land more valuable at once, and if the city buys park land piecemeal it has to pay in the later purchases an increased price due simply to its having previously started to establish a park in the neighborhood. The condemnation process, preceded by obtaining options where possible, takes all the land at one and the same instant and at the value of land in a district which has no parks.

As to the proportionate extent of local parks, we have seen that the reduction of lot depths from 150 to 125 feet and the use

EXTENT OF LOCAL PARK AREAS of the land thus saved out of the lots for parks and squares would give 10 to 12 per cent. of the total city area in local parks (depending upon the proportion of the total area occupied by streets.) Five per cent. has been considered a reasonable minimum allowance in some large cities, but no positive rule can be laid down. Perhaps as much as we can say is that less than 5 per cent. is generally inadequate and that much more than 15 per cent. in small local parks, except under peculiar circumstances, is apt to imply a needlessly dispersed, and therefore costly, urban development.

Since in general the selection of local park lands should be determined mainly by considerations of price it is inexpedient for

SPECIFIC PARK SITES us to make any definite recommendations except in case of certain sites possessing peculiar advantages for park purposes in proportion to their apparent market value as real estate. Of these, we have referred to three pieces in connection with the discussion of waterways. One is the vacant land on the south side of Boulder Creek just east of the 12th Street lots, and another is the vacant

meadow lying between the creek and the Lincoln School. Both of these are valuable for landscape purposes and as playgrounds and they are well distributed.

The third is the west half of the block lying between Nineteenth Street and the line of Twenty-First Street. This piece is traversed and bordered by the Beasley Ditch, and the water, with the trees that occupy its banks in part, gives a good start toward making a pleasant little park. If the three inexpensive houses on Water Street south of the ditch are acquired it would be possible to form an open playground of more than two acres in extent, surrounded by a shady walk along the ditch and along the surrounding streets, with an existing grove at the northwest corner and a small separate playground for little children in the space between the ditch and Nineteenth Street. Even if the house lots on Nineteenth and Water Street were omitted the vacant land alone would make a good though very limited local park. Apart from the park value which attaches to the water of the Beasley Ditch and to the grove of trees, the chief advantage of this tract is that it is the nearest considerable piece of vacant land to the High School and the Jefferson School. It is within a short couple of blocks of those two schools, which are urgently in need of playground space.

In connection with Boulder Creek we have called attention to the importance of preserving public access east of Seventeenth Street to the edge of the bluff that

LOVERS' HILL

flanks the south side of the valley and commands such fine views over the city. North of the valley a similar situation is presented by Lovers' Hill. This mesa, if it is proper so to call it, is divided into a western and an eastern part by a notch, through which Twentieth Street makes its twisting way. The eastern part has one house upon its southern edge, reached by a rather precipitous approach from the south. The western part, though platted (on paper) into streets and lots, is wholly vacant and is being slowly eaten away from the northwest by the brick works situated at its base.

To those citizens of Boulder who are not familiar with the

view we urgently recommend a stroll, some pleasant Sunday, along the top of Lovers' Hill, both parts, from Fourteenth Street to the County Road near Twenty-Fifth Street. The view, especially toward sunset time, is one that cannot be matched in many thousand miles of traveling.

The situation is a delightful one for dwellings were it not for the difficulty of access and the entire absence of trees, which renders it bleak and unsheltered both in appearance and in fact except in the pleasantest of weather. Of the two possible methods which have occurred to us for utilizing the recreative value of this hill one provides for developing also the opportunity which it presents for building sites. Starting from Thirteenth Street, we advise widening High Street on the vacant north side, so as to make it at least the equal of the old streets in liberality, and parking it and planting it with trees. East of Fourteenth High Street now vanishes into nothing up the steep hillside. A parkway in continuation of High Street should be carried through, in a cut, on a reasonably easy rising grade, until it reaches the surface of the mesa at its southerly edge. It should follow this edge approximately, on a curving line working off in an easterly and northeasterly direction at the level of the flat top surface of the hill to a point whence it could descend again by a reasonable grade, mainly in cut and crossing to the north side of the ridge, so as to meet the grade of Twentieth Street where the latter goes through the saddle between the west and east parts of the hill. Thence the parkway would rise again on a line just north of the present city boundary and again would skirt the southerly escarpment of the hill on curving lines to a point from which it could descend by an easy grade to join the County Road just as it crosses the easterly tail of the hill.

Wherever it is not encroached upon by houses—and those points are fortunately few—the steep hillside below this proposed parkway should be acquired and kept permanently open to protect the view. The market value of the land in question is relatively trifling because it is for the most part too steep to build on and most of it is rather inaccessible. The parkway itself would consist of a drive of moderate width, say thirty feet, and on the

southerly side of it, commanding the view, a broad promenade or gathering place, with benches, the whole being shaded by rather closely planted trees forming a long and somewhat winding or irregular grove rather than mere rows as in a street. The promenade or grove would vary somewhat in width, according to the shape of the hill, from a minimum of twelve or fifteen feet up to perhaps fifty or seventy-five feet and would sometimes be on the same level as the drive and sometimes a little below it. The water required for irrigation of the trees would be delivered on each part of the hill from a simple fountain which might in one case form the central feature of a concert grove where the band could play occasionally on summer evenings, a time when this promenade would be peculiarly attractive because of catching every breeze that stirs across the city.

The level land of the hilltop north of the parkway might be left in whole or in part available for building sites fronting on the parkway. In this case the increased value of the land as a result of the opening of such a parkway would offset a respectable share of the cost of land and construction. But it would be very much finer if the whole top of the narrow ridge could be kept forever open as a place of public recreation, commanding the views to the north and northwest as well as those to the south and southwest.

It is to be noted that the northern part of the hill is perhaps more valuable at the present time as a source of brick clay than for any other purpose, and that it would probably be very costly to make an adverse taking which would interfere with the established brick industry dependent on the use of the hill. If, however, the city should decide on the parkway and establish the grades thereof an advantageous co-operation with the brick works might be brought about, permitting them to remove the surplus material down to the grade of the parkway where it is in heavy cut at the north end with little or no expense to the city, and then permitting them to excavate to an indefinite extent along the north side of the parkway, provided enough material were left to support it at the established grade. If this were done the parkway in this section would be a peculiar and interesting civic

feature, a driveway and grove accessible on easy grades but standing isolated at a level above the roofs of the city, over which it would look both north and south to the mountains.

It is important that some decision should be reached soon for while it would be equally convenient for the brick works to adjust their excavations to the plan of a high level parkway, they are not unlikely, in the absence of such a plan, to excavate that portion of the ridge over which the parkway should run, thus complicating or wholly blocking the project.

Another point of some topographical interest for park purposes is the basin-like valley round which the Farmers' Ditch makes a large loop in the Newlands Addition. It is true that the soil is a wretched, stiff, alkaline shale, very ill-adapted for the growth of park vegetation, soggy, wet, cold and undrained, a most unpromising field from a horticultural standpoint. Nevertheless would we gladly see a park established there, for the form of the ground, within the boundaries marked by the Farmers' Ditch and Ninth Street and First Avenue, is from the artist's point of view most admirable, and the way it lies in relation to the views of the foothills gives opportunity for the development of a beautiful landscape of a type nowhere else to be found in Boulder and nowhere else in the city possible of creation in so perfect a form.

We should hesitate to cast our opinion against that of Mr. Andrews, who has condemned this site for cultural reasons; indeed we have admitted that the soil is wretched; but unless the case is rendered hopeless by factors of which we are left in ignorance by our superficial examination we should think it possible to redeem the soil sufficiently by thorough underdrainage and irrigation. This process might cost, at a guess, say \$1,000 an acre. For park purposes the land, on account of its topography, is certainly more than \$1,000 an acre in advance of the value of any other vacant land in the northwesterly quarter of the city, and at the same time its low, wet situation must make it much less valuable for most other purposes.

Chautauqua Grounds

The city has an interesting and valuable institution in the Chautauqua grounds and buildings and one which ought to become increasingly useful as time goes on. It is a sort of institution that may be expected both to grow and to alter in character a good deal from decade to decade as new conditions and new opportunities of usefulness arise, and it seems to us peculiarly a case where rigorous adherence to a predetermined plan of development is almost out of the question, and where it is wise, contrary to the principle which should ordinarily be followed in public works, to treat much of the improvements as frankly temporary, making the first cost low even at the expense of higher maintenance charges. This has been the policy in regard to much of the work done hitherto and we mention the point only because this is one of the rare cases in which such a temporizing policy has anything to commend it. We do not mean for a moment to suggest that it is not desirable or even necessary to have a plan of development and to work to that plan. Nothing but confusion and waste can result from proceeding without a programme of well defined aims. But we do mean to suggest that this is peculiarly a case where a comprehensive plan cannot be drawn up once for all and then carried out piece by piece literally and mechanically just as drawn. If this were attempted some new condition would soon turn up for which the plan made no provision and something would have to be done contrary to the plan, or at least something not provided for therein. After a few such occurrences the plan would appear hopelessly out of date and would soon be disregarded. The only wise procedure is to keep the general plan alive and up to date every year by revising it to meet new conditions as fast as they arise. That is to say, when there appears to be good reason for doing something contrary to the plan, the conditions ought to be squarely faced and an attempt made to see just how such a change would affect other features of the plan considered as a consistent whole. If the changes still seem wise, the plan should be changed first and the work then continued in accordance with the up to date plan. Obvi-

ously such changes and adaptations can be more understandingly made by the man responsible for the plan than by anyone else.

We make these explanations because this is an important question of general policy and also because we were consulted about the desirability of departing from the general plan prepared by Mr. Parce. It is a good plan and the work already done under it is interesting and very attractive; we strongly advise against departing from it; but we do think that Mr. Parce and the Commission might consider whether it would not be wise to modify it at certain points. For one thing it struck us that it would be an agreeable addition to plant a considerable number of trees on the terrace of the Auditorium with a view to providing shade and verdure close to the building and at the point commanding the best view. As it is desirable not to blanket the building entirely, these trees ought to be low and spreading, forming a sort of canopy or awning about the base of the building. We had in mind the treatment often adopted in such situations in European countries, where it is common to use sycamore trees (*Platanus orientalis*) for this purpose. They are planted pretty closely, even as close as 15 or 20 feet apart, their side branches are pruned so as to give clean, straight stems about 10 or 12 feet tall and at that level the branches are allowed to spread but the top of the tree is headed back by persistent annual pruning so as to prevent it from getting more than 15 or 18 feet tall altogether. Often the young branches that push up above the standard level are bent down and forced to grow horizontally by tying them down to light poles extending from tree to tree. With a little patience and persistence a living arbor can be formed in this way that would give shade without checking the breeze and greatly enhance the attractiveness of such a terrace as that of the Chautauqua Auditorium.

Another point to be considered is whether in the long run the sacrifice of a good part of the view from this terrace will not be too great a price to pay for the advantage of having a grove at the particular point below the terrace where trees have been planted.

A third point to be considered is as to the area north of the

Dining Hall. In view of the necessarily tentative and experimental development of the grounds we question whether the large oval terrace for tennis courts is quite justifiable. It is a rather large undertaking that must be put through completely at one operation if the design is not to look very unfinished and confused, and the amount of grading is rather large in proportion to the number of courts which can be accommodated on an area of this form. Further, the practical necessity of tall back-nets for the tennis courts would introduce a very conspicuous and inharmonious formal element, built on a rectangular plan to fit the tennis courts and seriously injuring the effect of the oval with its border of informal shrubbery as designed. Bearing in mind this practical requirement of a formal character and the fact that the straight row of buildings to the west of the space already establishes a somewhat formal treatment of that side, and the further fact that the tennis courts must have a dirt surface instead of a turf surface, we are inclined to think that it would look more reasonable (and therefore better) to plan for a series of terraces rectangular in plan and substantially parallel with the row of buildings, each terrace being just wide enough for one row of courts. The first of these terraces, coming immediately east of the road on which the Dining Hall faces, could probably be depressed enough below the level of that road to allow the steep bank or boulder wall which would support the latter to serve instead of a back-net on the west side, especially if supplemented by a parapet or closed railing along its upper edge. This would do away with any obstruction to the northward view from this road and would enable people to stand or sit on the road terrace and look down upon the tennis games as from a grandstand. Of course the tennis courts ought to be turned with their long axis approximately north and south so that the afternoon sun will not be in the eyes of either set of players. The first terrace of such a series would accommodate as many courts as the whole oval, with a movement of hardly more than half the quantity of material, and the plan is so simple that it would not look unreasonable or confused in design to build part of such a terrace, (enough say for two or three courts only) at the first go-off and to extend it later on when the demand and the funds might justify. The

number of courts might subsequently be doubled or trebled by adding other, lower, terraces to the eastward.

As to the plan for cottages facing toward the Dining Hall and backing upon Park Avenue (the Base Line Road), about which we were questioned, we are in some doubt. Unless a reserved space of some width is left between the street and the backs of the cottages and is well planted out, there is a danger that the effect upon the general public and upon those approaching the grounds by electric car would not be altogether agreeable; and further unless some rather heavy grading were done the cottages themselves might appear to be rather below the road on which they were facing, or at all events too much below the bank on the uphill side of it. On the whole we are inclined to think it would be better to omit this row of cottage sites and use this part of the grounds ultimately for such general purposes as tennis and basketball courts, a little children's playground, and general park purposes in which the public entering at the adjacent gate is more interested than in the cottages. The best opportunity for the institution to expand in case of need is westward, and the land belonging to the city in that direction ought to be held with such possible expansion in view.

Up the hill to the southwest beyond the reservoir there is a change in the character of the topography and scenery, and it seems to us of the utmost importance to maintain a pronounced and sharply defined difference in treatment. The Chautauqua grounds ought to be nicely kept, orderly, trim, thoroughly domesticated in character. If they are expanded from time to time by taking in additional pieces of land, this character of treatment should be extended also, but always they should have a well-marked boundary and once across that boundary all domestic niceness of finish and especially all garden-like planting, or lawn-making or decoration—in short all sophistication whatever—should be left behind.

The City Forest

In the great tract of unspoiled foot-hill scenery lying above and beyond the Chautauqua grounds Boulder has a priceless possession. It may be that only a comparatively small proportion of the citizens have learned to make full use of it. Indeed most of it is as yet so ill-provided with means of access that it is very difficult to reach it at all. But as paths and well planned roads are gradually extended through the tract it will become possible for anyone to traverse in the course of two hours' leisurely walking or driving, as beautiful, wild and refreshing scenery as any that thousands upon thousands of busy, hard-working Americans spend largely of their money and time to enjoy by traveling thousands of miles from home.

We have little specific advice to offer beyond the caution not to spoil what a bountiful nature has provided. The qualities that make such scenery precious are subtle and difficult to analyze. Verdure of a richer quality than these foot-hills have to show may be found in every commonplace suburb in the country; handsomer trees abound throughout at least three-quarters of the United States; taller and more precipitous cliffs, deeper chasms, are to be found along the canons of Wall Street and Broadway and in the business districts of other great centers of population throughout the country. But on the foothills of Boulder, beside the intrinsic beauty of color and form and texture in the wonderfully sculptured surfaces of earth, in the rock masses and in the vegetation; beside the impression of spaciousness and freedom derived from the height of the peaks, the depth of the valleys and the breadth of sweeping outlook over miles of varied open plain; there is beyond all that, a sense of escape from the tiresome evidences of the human management of everything in sight which pervades all civilized life and especially life in cities. The more highly civilized our life becomes and the more skillfully and perfectly all our affairs are managed by human agencies, the more we come to value the means of securing occasional relief from the insistent pressure of human contact and

control. Therefore the one principle before all others that should control the management of Boulder's City Forest in the foot-hills, is to avoid every single thing that would obtrude the idea of human control of the scenery, except insofar as is necessary to provide convenient means of making the scenery accessible. Roads and paths, well planned, on easy grades, to lead people without undue effort to the most lovely points of view are certainly needed. But they should be so designed as to be as unobtrusive as possible and from the very edge of the traveled way, if possible, Nature should appear to be in full command. Sometimes to accomplish this end may require more interference with nature at the time of constructing the road or path than the businesslike engineer would regard as necessary. The minimum of construction, for example, might leave a raw, stiff, artificial bank of earth beside the traveled way some twenty feet in width, of such a character that the processes of nature would not subdue it and bring it into harmony with the rest of the hillside for several generations if unassisted, whereas by flattening and modelling the bank and merging its edge with the surface beyond, the way might be prepared for nature to repossess the surface in a short time, leaving the traveled way itself as the only conspicuous mark of dominant human interference. But very often in such rough and rocky ground, especially on steep side-hills, a rough wall to support the lower side of the road leaves the least conspicuous mark of human interference beyond the traveled way, and has the great advantage of stopping sharply and not "dribbling" out over the landscape. Other human structures may be needed here and there in time, bridges and shelters for example. But any such things should have two invariable characteristics: unobtrusiveness in design, material and color, depending in detail upon the nature of the immediate background and surroundings; and such permanence of character that nature can have time to adopt them as her own by the processes of surface weathering and the growth of lichens and of larger vegetation upon and about them, long before they are so far decayed as to need renewal.

Above all no single thing should ever be done within the limits of the City Forest with a view to decoration, for human

decorations are bound to be trivial and distracting if applied to nature on this great scale.

To guard against the defacement of the foothills by fire or by careless private exploitation the area now controlled by the city ought to be gradually and systematically extended so as to include all of the frontal escarpment directly in view of the city, reaching southward beyond South Boulder Peak and northward to the vicinity of Two Mile Canon. So much of this land as is still in the hands of the Government ought to be secured as a gift on condition that it be held forever as a public forest.

A plan ought to be devised for a system of first-class roads on easy grades leading through the most interesting passages of scenery that can thus be made accessible; and then each year as much road should be built, according to plan, as the city feels ready to pay for. Walking trails, being so much more flexible in location and so much cheaper to build need not be so thoroughly planned in advance, but a certain amount of planning and construction of trails should be done each year as well.

One other small improvement of some importance is the establishment of conveniences for picnicing at certain selected points, especially at points where water is available. At these points convenient stone hearths should be prepared so situated and designed as to minimize to the utmost the danger of the spread of fire, and a supply of firewood should be kept on hand so that every inducement will be offered to the "beefsteak parties" and to campers to use these points and no others for fires. Stringent rules should then be published against the making of fires except at the designated camping places.

When we urged above that beyond building necessary roads and structures nothing should be done in the forest that would obtrude the idea of human control, we did not mean to imply that nothing at all should be done to it. Protection against fire is an essential, and the utilization and sale of the timber as it ripens to merchantable size is a reasonable and proper use of the forest, provided it be done in a conservative manner and with due regard to certain special passages of scenery where venerable and even decrepit trees are important elements of scenic value.

Indeed there are thousands of places where the present condition of sparse small tree growth, by permitting an unobstructed outlook from road, path or other special vantage point, offers greater enjoyment of scenery than would be the case were the trees to grow to full size and density of stand. The new forest growth is spreading steadily down over the lower slopes and thickening above, and throughout a large part of the reservation the time will soon be ripe to begin systematic thinnings and cuttings, whether the matter be regarded mainly from the point of view of scenic enjoyment, as we believe it should, or from the standpoint of economic forestry. While we believe that the ordinary considerations of economic forestry should here be secondary, we can see no reason why they should be wholly disregarded; and with the steadily rising price of timber there is no reason why the forest should not, under proper management, bring in a small return from timber sales, sufficient, presumably, to pay the expenses of protection and care, so that the city would be burdened only with the cost of such improvements as new roads and trails.

Another small source of income which can be utilized to the distinct advantage of the scenery is the grazing privilege. There are a number of tracts, especially on the lower slopes and on the mesas, where persistent grazing, if properly regulated as to amount, will tend to extend and maintain one of the most beautiful types of quiet landscape that can anywhere be found, the park type of landscape in the true sense of that misused word, a type of smooth-cropped pastoral land merging into open woodland with scattered trees and groups of trees and shady groves and open sunny glades intermingling and merging one into the other in a succession of charming picturesque compositions of endless variety and beauty.

It is to be hoped that the people of Boulder will never be beguiled into permitting the establishment upon Flagstaff Mountain, or elsewhere in the midst of the Municipal Forest, of a so-called amusement park such as has been proposed in connection with a project of an inclined railway. This is not because we have any objection to amusement parks as such; we have laid

them out and we fully appreciate the amount of pleasure they can give. Also we fully appreciate the fact that if they occupy sites of peculiar natural interest they will draw larger crowds than otherwise; for many are attracted by points of natural interest made easily accessible who would not go out of their way for the "amusements" alone, although when they are on the spot they are apt to follow the herd and leave their share of nickels behind. The promoters of the shows and the transportation companies gain from this combination and those who go primarily for the sake of the amusements get a mild flavoring of the sauce of scenery along with their salad of varied excitements and amusements. The people who go primarily for the sake of the scenery are apt to be in doubt whether they are the more pleased to have it accessible or the more disgusted to have their attention distracted by so many incongruous sights and sounds.

The enjoyment of scenery is a good deal like the enjoyment of music. A great many people, probably the majority of people, are rather pleased to hear music, if it is not too loud or too absorbing, when they are at a gay dinner party and busily engaged in chatting and eating their dinner. It is the habit of some of the vulgar rich to treat the best of opera music in the same way, as a mere sauce to conversation in their boxes. But no one who really enjoys music wants to be distracted from a great performer's playing by conversation or dinner or a game of billiards or any of a thousand and one things that he might be glad to do at some other time and place.

The scenery of Flagstaff Mountain is too noble, too magnificent, too precious, to be wasted in serving as an almost unheeded accompaniment to the fun of roller coasters, moving pictures and vaudeville shows. There are dozens of places near Boulder where a pretty and attractive amusement park could be laid out and provided with transportation facilities at less expense than on Flagstaff Mountain and where it would draw just about as big a crowd and give just about as much pleasure, whereas an amusement park on Flagstaff Mountain would to a great extent ruin the highest value possessed by the whole City Forest, namely, that

BOULDER CITY IMPROVEMENT ASSOCIATION

when you get into it you pass into a different world from the city. into a place of quiet mountain scenery, remote and vast, where the weary can find peace.

Public Buildings

The matter of public buildings and their location is one to which, in our brief study of the city, we did not give the attention which the subject deserves. But we could not help noticing that the present arrangements for the City Hall and other city offices are a makeshift, neither convenient nor by any means worthy of the community.

It goes without saying that it is desirable, within reasonable limits, to group together the main public buildings of a city, both as a matter of convenience and for the sake of appearance, and when one examines the opportunity of making such a grouping in Boulder he is confronted with two alternatives. The City has a distinct center in Court House Square and the thought naturally suggests itself that the principal public buildings ought to be grouped around this square. But since the sides of the square are already occupied by private property of considerable value a good deal of expense would be involved in such an improvement and one looks, as an alternative, for some cheaper property where a new center could be formed.

The Pearl Street frontage on Court House Square is part of the principal shopping street, and apart from the expense of acquiring the property for public buildings there is a strong objection, for general commercial reasons, to the complete interruption of the continuity of stores along such a shopping street. We may therefore dismiss the Pearl Street frontage as a site for public buildings. On the Thirteenth Street frontage the new hotel has just been erected, a quasi-public building of the sort that can very properly form part of a civic center. It is to be carefully considered whether the remainder of the Thirteenth Street frontage and the frontage on Spruce and Fourteenth Streets cannot reasonably be utilized for public buildings. The price of such sites, taking into account land and buildings, would be relatively high, but the advantage of facing Court House Square, the great convenience of such a grouping in so central a locality, and the architectural effect made possible, would be worth paying a good price for.

BOULDER CITY IMPROVEMENT ASSOCIATION

Conditions do not seem to favor starting a new center. The nearest locality where a sufficiently large block of land to make a really good group could be secured at a low price is toward Boulder Creek, and apart from the prejudice against a low site and one which is now in such unattractive condition, this is objectionable because of its being separated from the business center of the town by the railroad.

Fine isolated sites for public buildings or monuments are to be found at the northerly ends of several streets where they terminate against Lovers' Hill, and in planning and acquiring the proposed parkway along that hill it would be well to secure public control of these strategic points, which can so readily be used for striking features at the termini of the several street vistas. The opportunity is particularly good at the ends of Fourteenth, Sixteenth, Seventeenth, Eighteenth (if we remember correctly) and Twenty-Third Streets. A glance northward on Fifteenth Street, the vista of which is closed by a small private house, will suggest the value of a proper architectural treatment of these sites and the desirability of getting them into public possession.

Control Over Private Property

This report has already drawn itself out to such length that we must not further extend it by entering upon a general discussion of the pregnant subject of the control which may reasonably and wisely be exerted by the municipality over the freedom of the individual to use his property according to his personal pleasure without regard to the interests and wishes of his neighbors.

We cannot, however, forbear to touch upon one point, the matter of billboards and display advertising. No one can ques-

THE BILLBOARD NUISANCE tion that the presence of large and frequently garish advertising signs, designed specifically to stand out strikingly from their surroundings and violently arrest the attention, is more or less irritating and annoying to most people and tends to make the city less agreeable in appearance. Not infrequently an acceptable piece of information is conveyed to the mind, especially in the case of posters announcing some entertainment or other passing event, but it is very seldom that the ordinary citizen gets any advantage from the signs and posters that compensates him for the annoyance. It is clearly a case where the privilege of the abutter upon a public highway to see and to be seen by the passing public is liable to abuse, and frequently is abused to the detriment of the general public which pays for maintaining the street. When the abuse goes so far as to give indubitable offense to public morals or health through the nature of the advertisement or through the erection of a shield which invites the commission of nuisances by others; or when the abuse goes so far as to cause serious risk of life, limb or property through the maintenance of structurally dangerous or inflammable billboards; then the courts will protect a complainant under the law of nuisance, if anybody is willing to take the trouble to go to law about a matter which is everybody's business and therefore nobody's business. In our easy-going American way most of us hate to take an unpleasant initiative, or to risk getting the reputation of being fault-finding busy-bodies;

so we do not get the relief and protection from such nuisances which we might get even under the common law. But the courts are, properly, so conservative and cautious about arbitrarily interfering with an individual's use of his own property that the abuse has to be a crying and outrageous one before the courts will order it to be abated under the law of nuisances. And up to that point there is now no relief or mitigation of the abuse. The most effective way to deal with it appears to be by license and taxation, the same method that is used to control many other business enterprises which are legitimate but liable to abuse.

The requirement of a license before any sign may be publicly exhibited, other than one relating to business carried on upon the premises; the requirement that any sign or structure for the support and exhibition of signs or posters which may be erected under the license shall be securely built, and of fireproof material (galvanized iron is commonly used); the imposition of a reasonably heavy annual license tax based upon the size of the sign or billboard authorized by the license; and a proviso that the license may be revoked or suspended at the discretion of the licensing authority in case any immoral, indecent or fraudulent advertisement is exhibited; these measures are legally practicable and will tend to keep the abuses of the business within bounds.

In closing this long and discursive report we beg to express the pleasure and interest we took in our visit to Boulder, brief as it was, and the interest with which we look forward to the results of a fuller awakening of the citizens to the peculiar opportunities of the situation and to the need of a progressive municipal policy in conserving and developing them.

Respectfully submitted,

OLMSTED BROTHERS,

Landscape Architects.

Brookline, Mass.

Nov. 9th, 1905.

**RETURN
TO** 

ENVIRONMENTAL DESIGN LIBRARY

210 Wurster Hall

642-4818

LOAN PERIOD 1 QUARTER	2	3
4	5	6

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS
Return books early if they are not being used

DUE AS STAMPED BELOW

FORM NO. DD 13, 60m, 6'76

UNIVERSITY OF CALIFORNIA, BERKELEY
BERKELEY, CA 94720

U.C. BERKELEY LIBRARIES



C033629481

